

SERVICE MANUAL

FISHER

CR-W52

**Stereo Double
Cassette Deck
(EUROPE)**



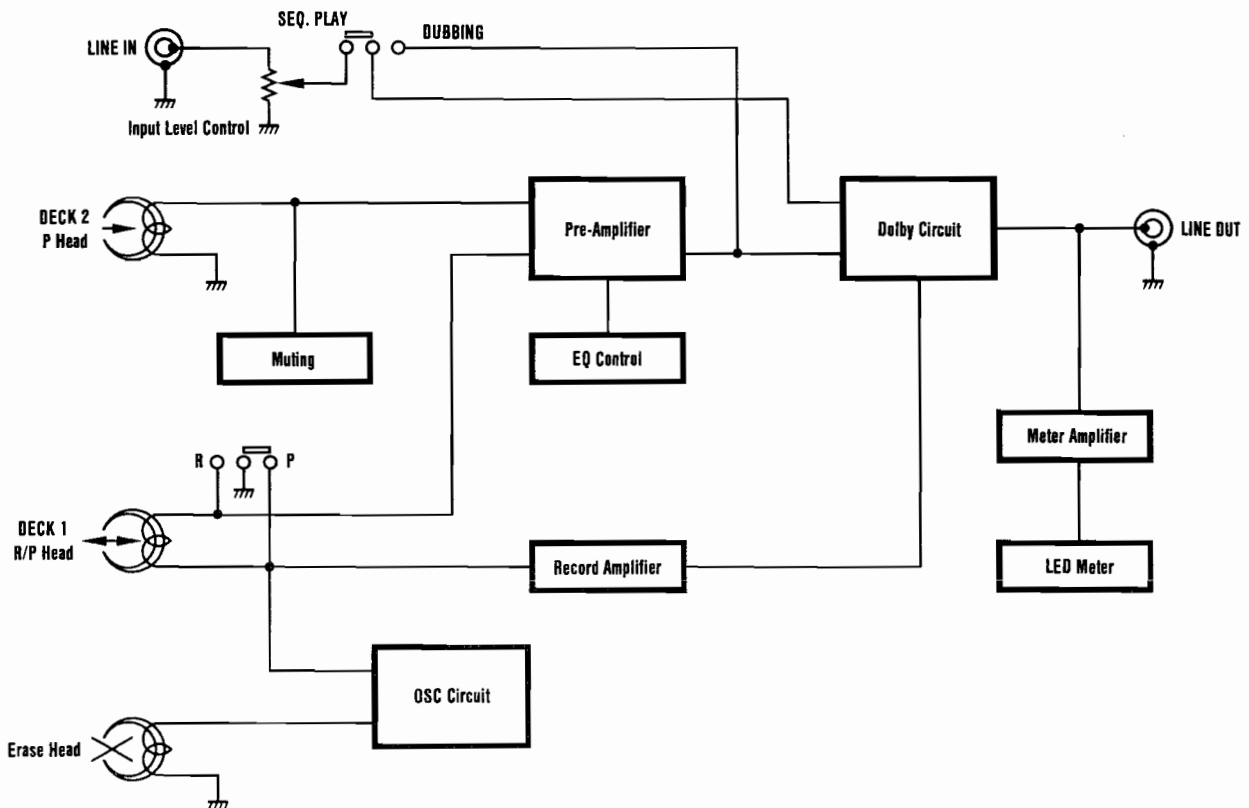
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WM-14719

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FUNCTIONAL BLOCK DIAGRAM



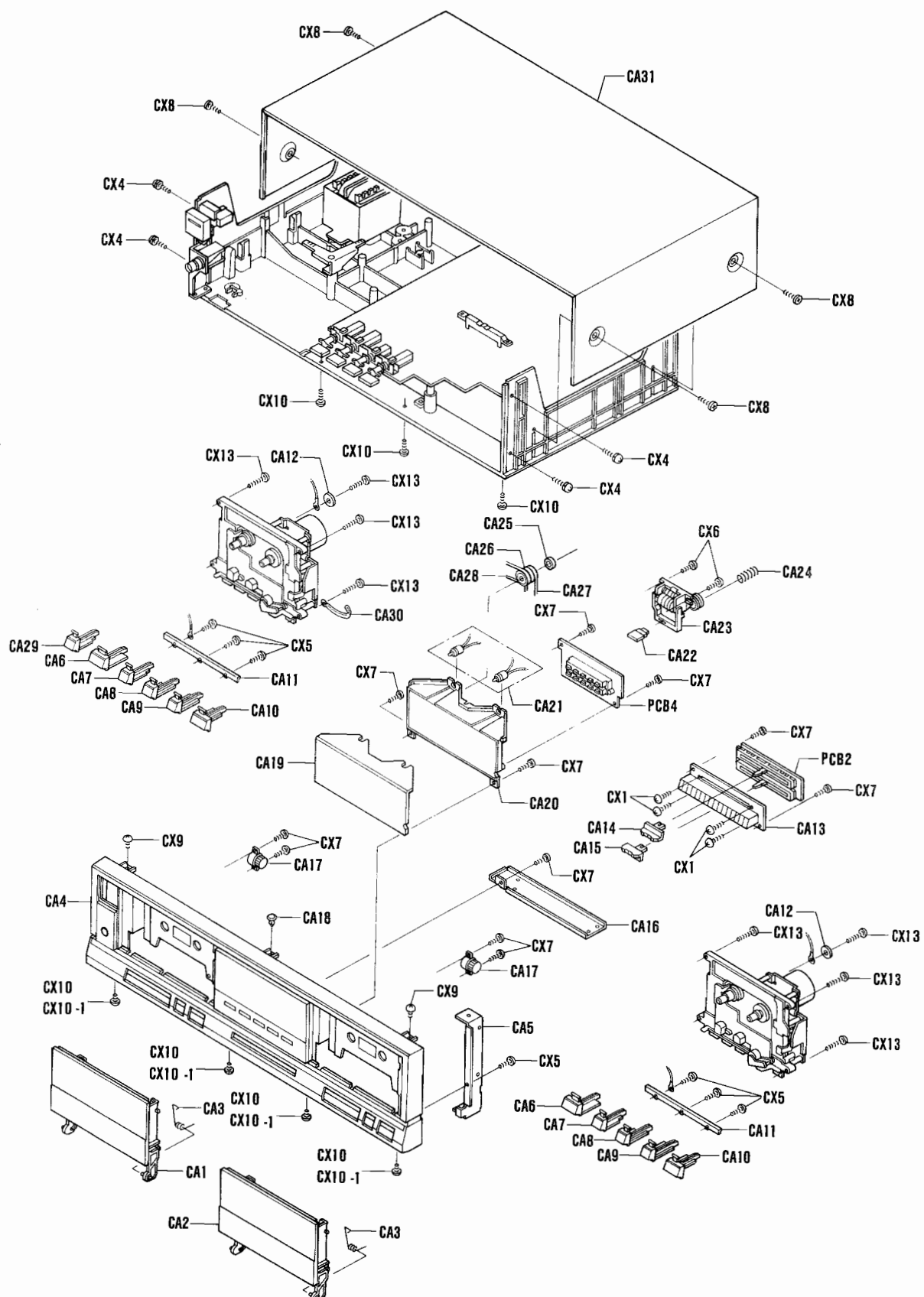
SPECIFICATIONS

CASSETTE DECK	CR-W52
Motor	(2) DC Governor
Cassette Loading	(2) Front
Drive System	(2) Capstan
Number of Heads	2 / 2
Head Material	Hard Permalloy / Ferrite
Operation	(2) Powered Mechanism
Wow & Flutter	0.06 % WRMS
Signal-to-Noise Ratio (CCIR Weighted)	
Dolby Off	51 dB
Dolby On B	61 dB
Dolby On C	70 dB
Erase Ratio	70 dB
Channel Separation	40 dB
Signal Crosstalk	70 dB
Frequency Response (Dolby Off)	
Normal Tape (± 3 dB)	40 Hz – 13 kHz
CrO ₂ Equivalent Tape (± 3 dB)	40 Hz – 14 kHz
Metal Tape (± 3 dB)	40 Hz – 15 kHz
Total Harmonic Distortion at 0 VU	1.2 %
Fast Forward / Rewind Time (C-60)	110 sec.
Level Indicators	(2) L.E.D. Meters
Input (Sensitivity / Impedance)	(2) Line 100 mV / 50 k Ω
Output (Level at 0 VU / Impedance)	(2) Line 500 mV / 2.2 k Ω
Tape Select Button	Normal, CrO ₂ , Metal
Tape Counter	Mechanical
Power Requirements	AC 110/220 V (50 Hz)
Power Consumption	18 Watts
Dimensions (W x H x D)	440 x 125 x 255 mm
Weight (approx.)	4 kg

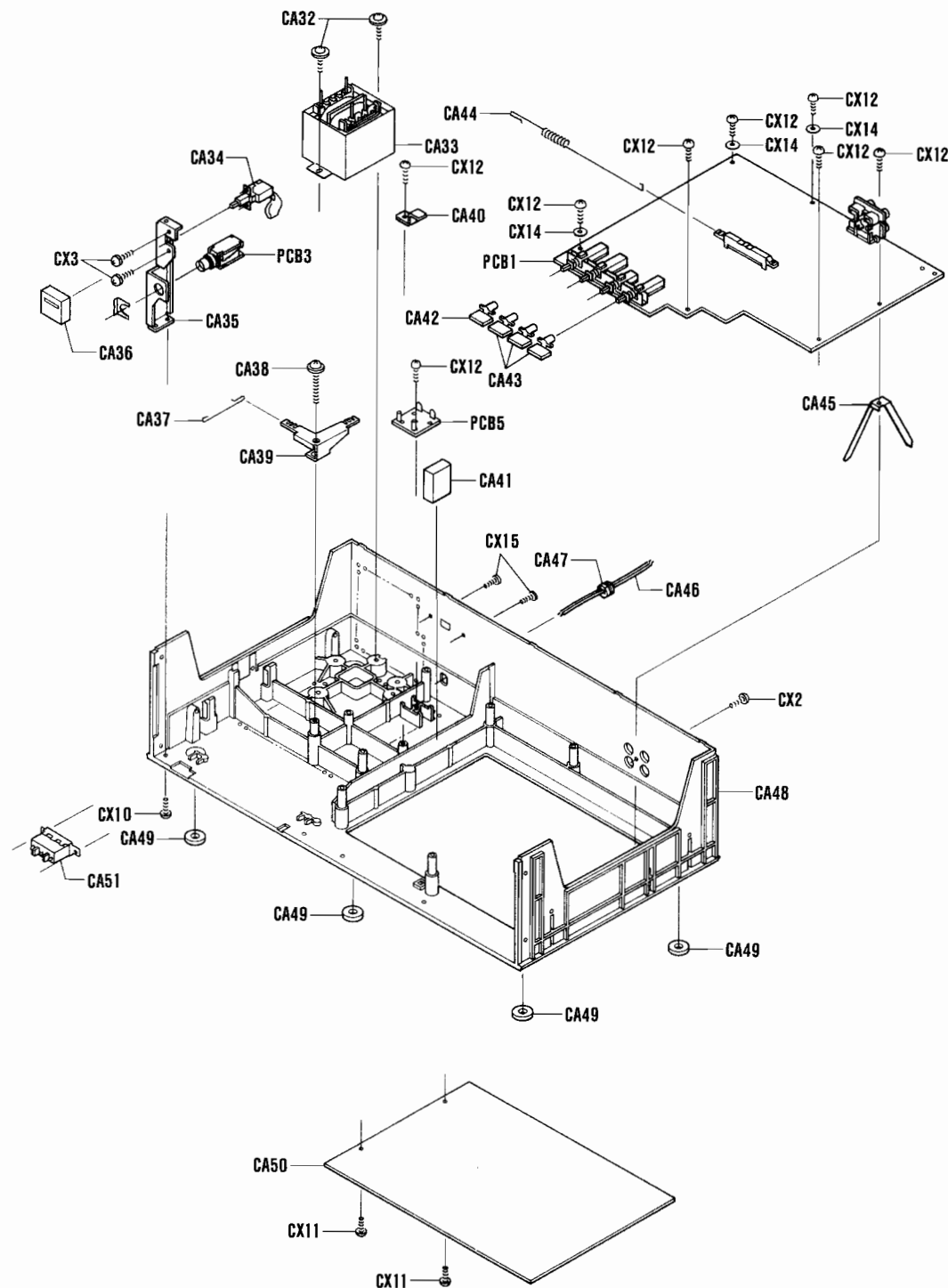
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CABINET & CHASSIS EXPLODED VIEW



CABINET & CHASSIS EXPLODED VIEW (Continued)



CABINET & CHASSIS PARTS LIST

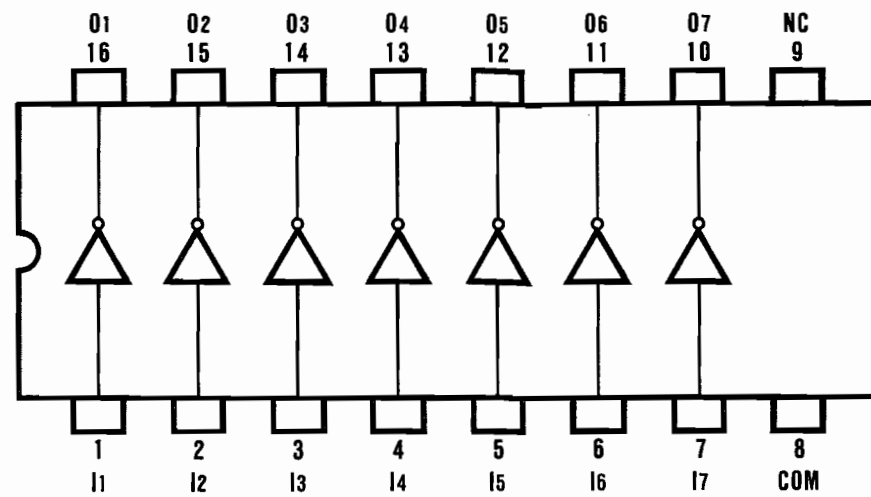
PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

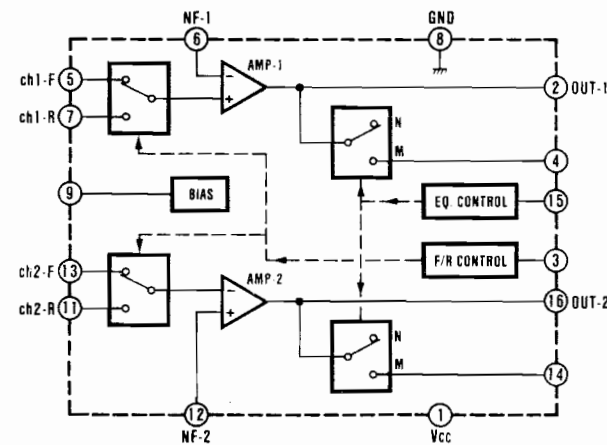
Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
PACKAGE				CA28	141-2-5649-14500	Belt Counter	1
	3-9415-10300	Bag Polyethylene	1	CA29	141-2-1659-10300	Button Record	1
	131-6-2119-02090	Bag Polyethylene Exp	1	CA30	141-2-4729-04100	Lug	1
	131-6-3069-16350	Patching Sheet	1	CA31	141-2-1119-83901	Cover	1
	141-6-1419-81107	Individual Carton	1	CA32	141-2-4219-15500	Screw Washer	2
	141-6-1469-01200	Pad Low	1	CA33	Δ 4-2519-74151	Power Trans [T301]	1
	141-6-1469-04100	Pad Left	1	CA34	Δ 4-2312-05030	Switch Push Power [S13]	1
	141-6-1469-04200	Pad Right	1	CA35	141-2-3659-21100	Bracket Switch	1
	141-6-1469-05100	Pad Top	1	CA36	131-2-1601-85202	Knob Power	1
	141-6-4559-03300	Serial No. Sheet	2	CA37	141-2-4629-02300	Joint R/P	1
ACCESSORIES				CA38	131-2-4201-25206	Screw, M3.0x20	1
	131-0-4004-15200	Wire Shield Assy	1	CA39	141-2-8419-15600	Lever Record	1
	131-0-4004-15201	Wire Shield Assy	1	CA40	141-2-3159-04100	Rein Force	1
	131-6-2719-10401	Bag Fan	1	CA41	141-2-4469-52400	Cushion	1
	131-6-4519-15700	Guarantee Cert	1	CA42	131-2-1601-80702	Knob	1
	141-6-4559-03200	Serial No. Sheet	1	CA43	131-2-1601-80700	Knob	3
	142-6-4119-32556	Instruction Booklet	1	CA44	141-2-8549-08900	Spring R/P Switch	1
CABINET				CA45	141-2-8539-53200	Spring Earth	1
	141-6-4729-07700	Label Caution	1	CA46	Δ 4-2439-70350	Power Cord	1
	141-2-1419-13387	Rating Plate	1	CA47	141-2-3899-10400	Heyco Bushing	1
	141-2-4729-07100	Wire Band	6	CA48	141-2-3119-17906	Chassis Cabinet	1
	131-2-6114-00200	Cover Safety	1	CA49	141-2-4469-22000	Cushion	4
C319	Δ 4-2239-70490	Capacitor 0.01 μ F 400V	1	CA50	141-2-2449-36000	Sheet	1
CA1	141-0-1249-33800	Lid Cassette Assy 1	1	CA51	Δ 4-2319-72140	Switch Slide (Voltage Select) [S14]	1
CA2	141-0-1249-33801	Lid Cassette Assy 2	1	CX1	101-3-1302-00418	Screw, Pan Hd., +M2.0x4	4
CA3	141-2-8529-25700	Spring Cassette-up	2	CX2	102-3-1703-01218	Screw, Bind Hd. Tapp.-1, +M3.0x12	1
CA4	141-0-1129-09903	Cabinet Front Assy	1	CX3	131-3-1303-00611	Screw, Pan Hd. C SW, +M3.0x6	2
CA5	141-2-3169-25800	Bracket Side	1	CX4	131-3-1303-00811	Screw, Pan Hd. C SW, +M3.0x8	4
CA6	141-2-1659-10400	Button Play	2	CX5	143-3-1302-60611	Screw, Pan Hd. Tapp.-B, +M2.6x6	7
CA7	141-2-1659-10500	Button Rewind	2	CX6	143-3-1302-60811	Screw, Pan Hd. Tapp.-B, +M2.6x8	2
CA8	141-2-1659-10600	Button FF	2	CX7	143-3-1702-60811	Screw, Bind Hd. Tapp.-B, +M2.6x8	11
CA9	141-2-1659-10700	Button Pause	2	CX8	143-3-1704-01218	Screw, Bind Hd. Tapp.-B, +M4.0x12	4
CA10	141-2-1659-10800	Button Eject	2	CX9	143-3-1903-00511	Screw, Braz. Hd. Tapp.-B, +M3.0x5	2
CA11	141-2-3519-71700	Plate Knob	2	CX10	143-3-1903-00818	Screw, Braz. Hd. Tapp.-B, +M3.0x8	8
CA12	131-2-4203-83219	Washer	2	CX11	143-3-1903-01011	Screw, Braz. Hd. Tapp.-B, +M3.0x10	2
CA13	141-2-3619-12100	Cover Volume	1	CX12	143-3-1903-01211	Screw, Braz. Hd. Tapp.-B, +M3.0x12	8
CA14	141-2-1649-30600	Knob Volume Left	1	CX13	143-3-1903-01611	Screw, Braz. Hd. Tapp.-B, +M3.0x16	8
CA15	141-2-1649-30700	Knob Volume Right	1	CX14	110-3-9321-00102	Fiber Washer, M3.2x10.0x1.0	3
CA16	141-2-3169-25700	Bracket Center	1	CX15	101-3-1702-00618	Screw, Bind Hd., +M2.0x6	2
CA17	141-0-5519-07903	Gear Eject Assy	2	PCB1	141-0-1939-10791	Amplifier P.C.B. Assy	1
CA18	131-2-4221-00600	Rivet	1	PCB2	141-0-1939-10800	Volume P.C.B. Assy	1
CA19	141-2-1329-16201	Clear Meter	1	PCB3	141-0-1939-10810	Headphone P.C.B. Assy	1
CA20	141-0-1149-13101	Panel Meter Assy	1	PCB4	141-0-1939-10820	LED Meter P.C.B. Assy	1
CA21	4-6129-70663	Lamp (P.L.)	1	PCB5	141-0-1939-11520	Terminal P.C.B. Assy	1
CA22	141-2-1659-47400	Knob Reset	1	NOTE:			
CA23	141-2-8119-14200	Counter	1	1. Parts order must contain Model Number, Part Number and Description.			
CA24	141-2-8559-11400	Spring Reset	1	2. Ordering quantity of screws and resistors must be multiple of 10 pcs.			
CA25	141-2-5369-08200	Mold Ring	1				
CA26	141-2-6619-02600	Pulley	1				
CA27	141-2-5649-26300	Belt Counter	1				

IC SIGNAL FLOW & EQUIVALENT CIRCUIT

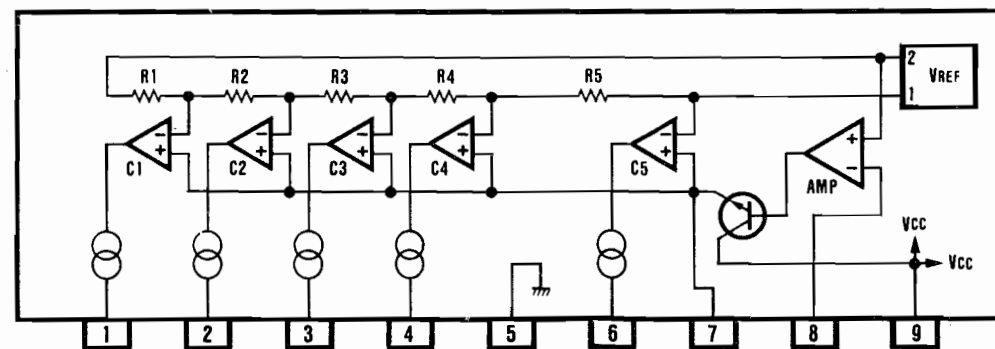
SWITCHING IC TD 62504 P



AF AMP IC TA 7705 P

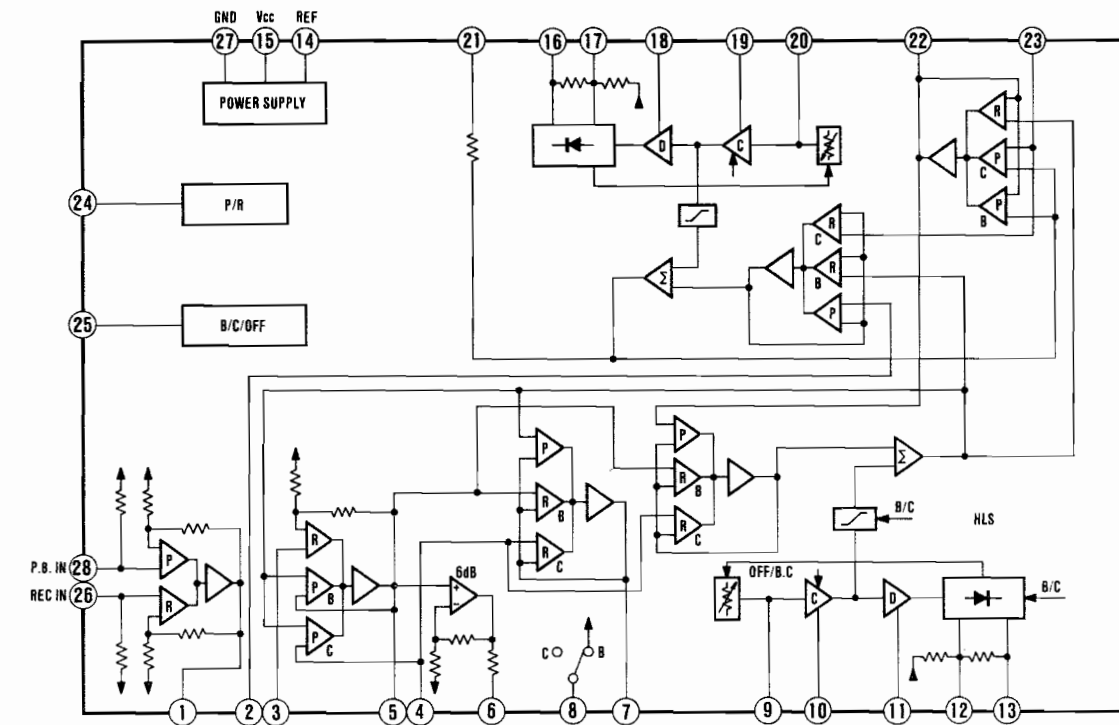


METER IC TA 7366 P



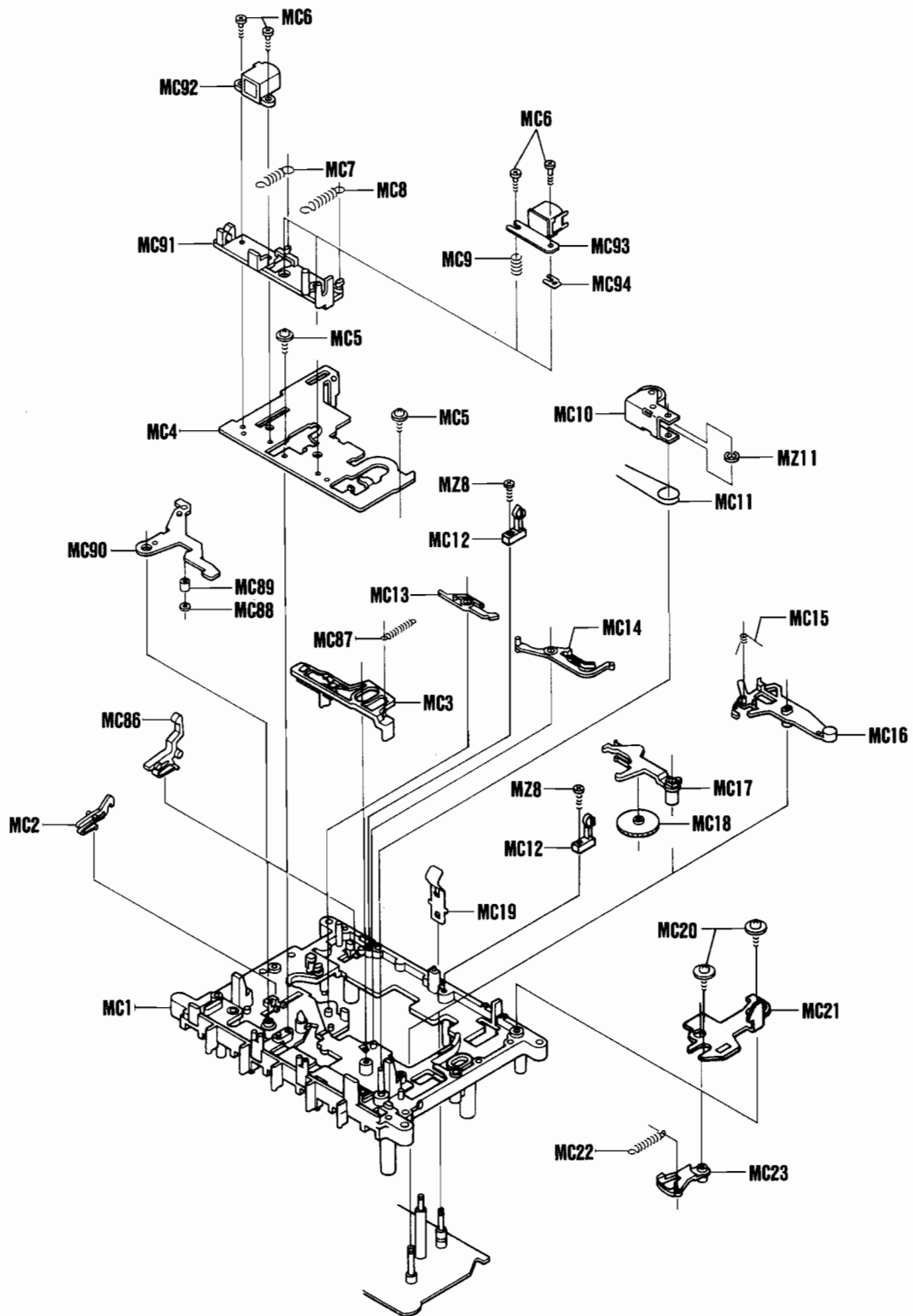
IC SIGNAL FLOW & EQUIVALENT CIRCUIT (Continued)

DOLBY IC TEA 0665



MECHANISM EXPLODED VIEW

(DECK 1 TOP)

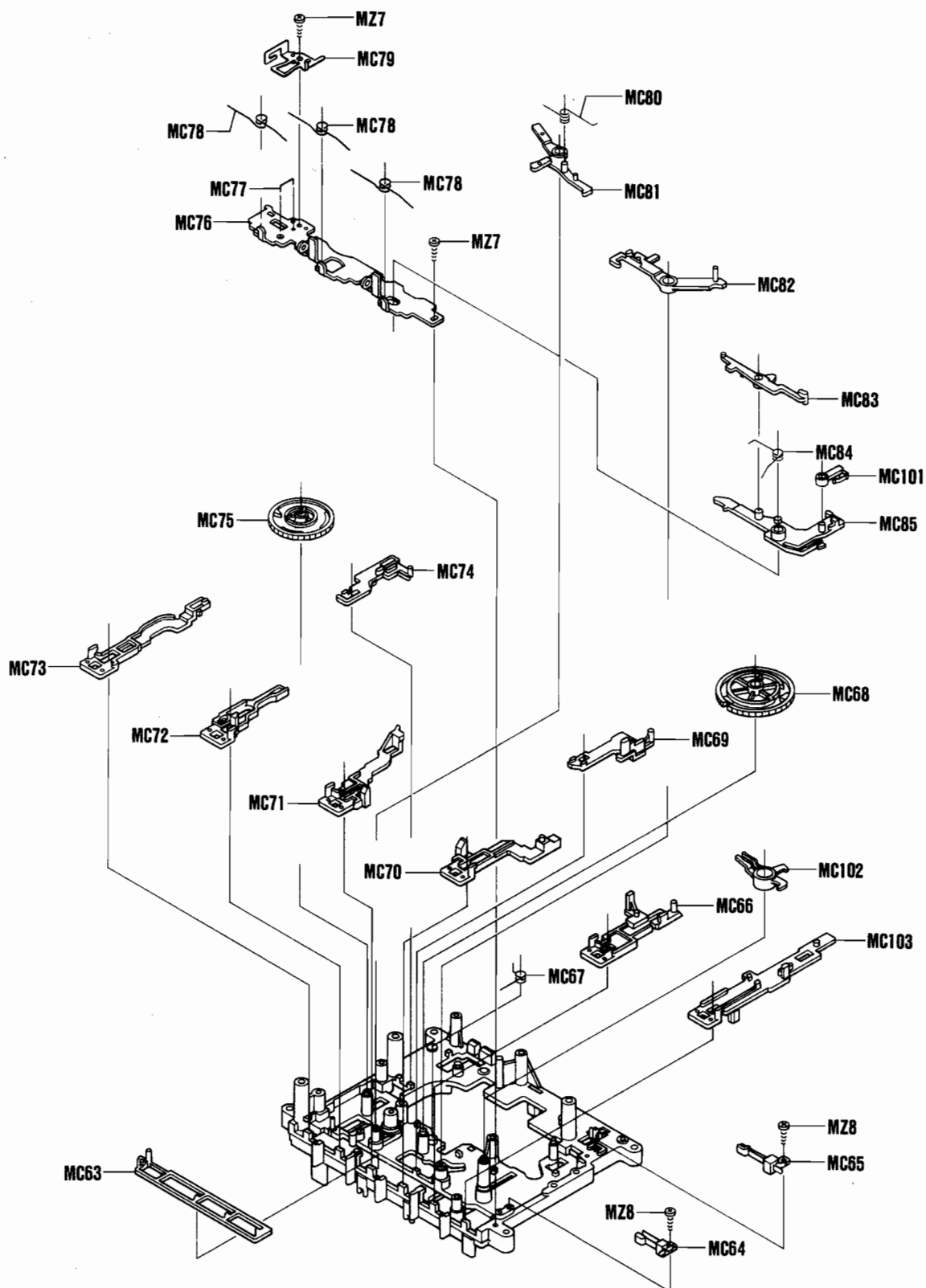


(DECK 1 BOTTOM-1)



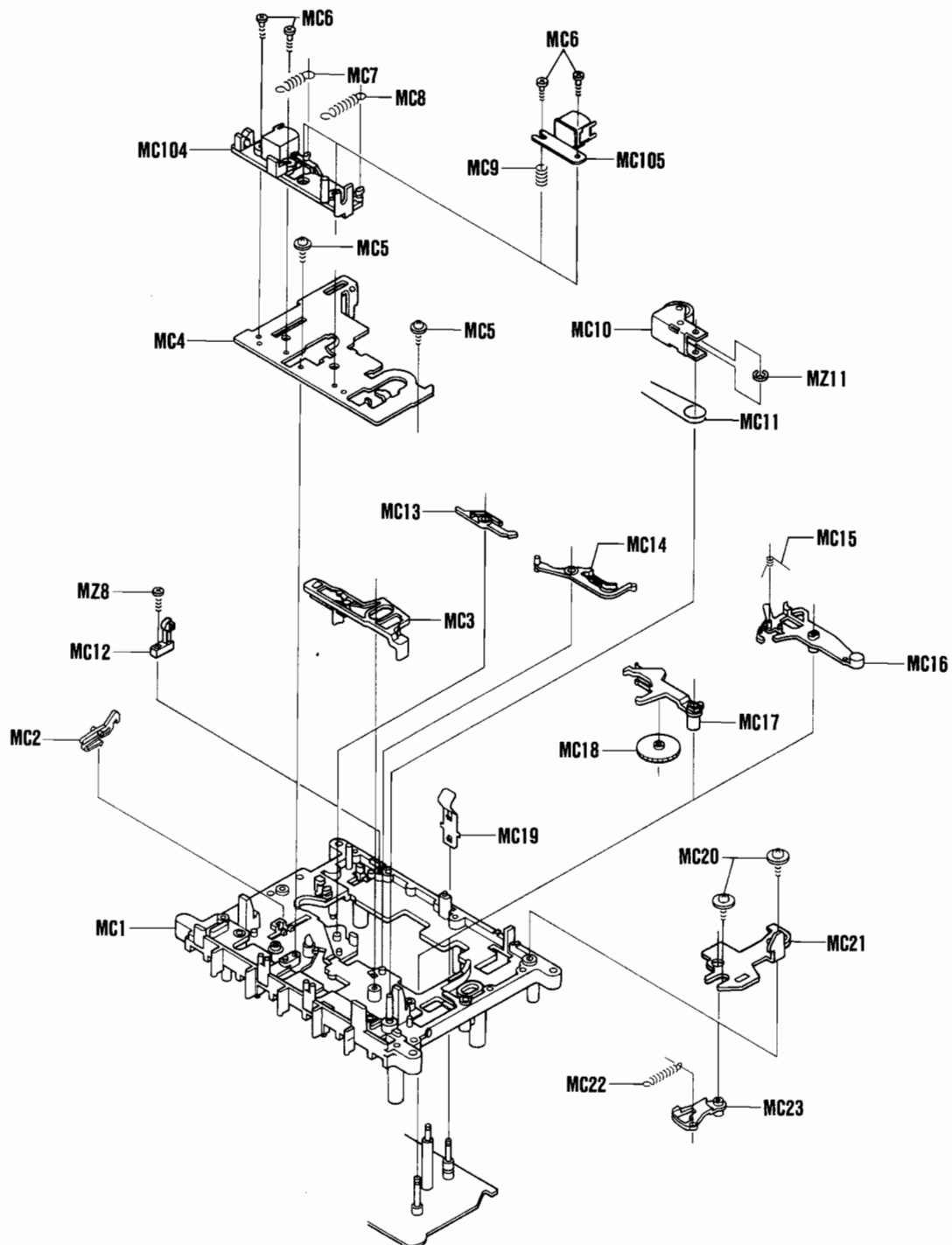
MECHANISM EXPLODED VIEW (Continued)

(DECK 1 BOTTOM-2)



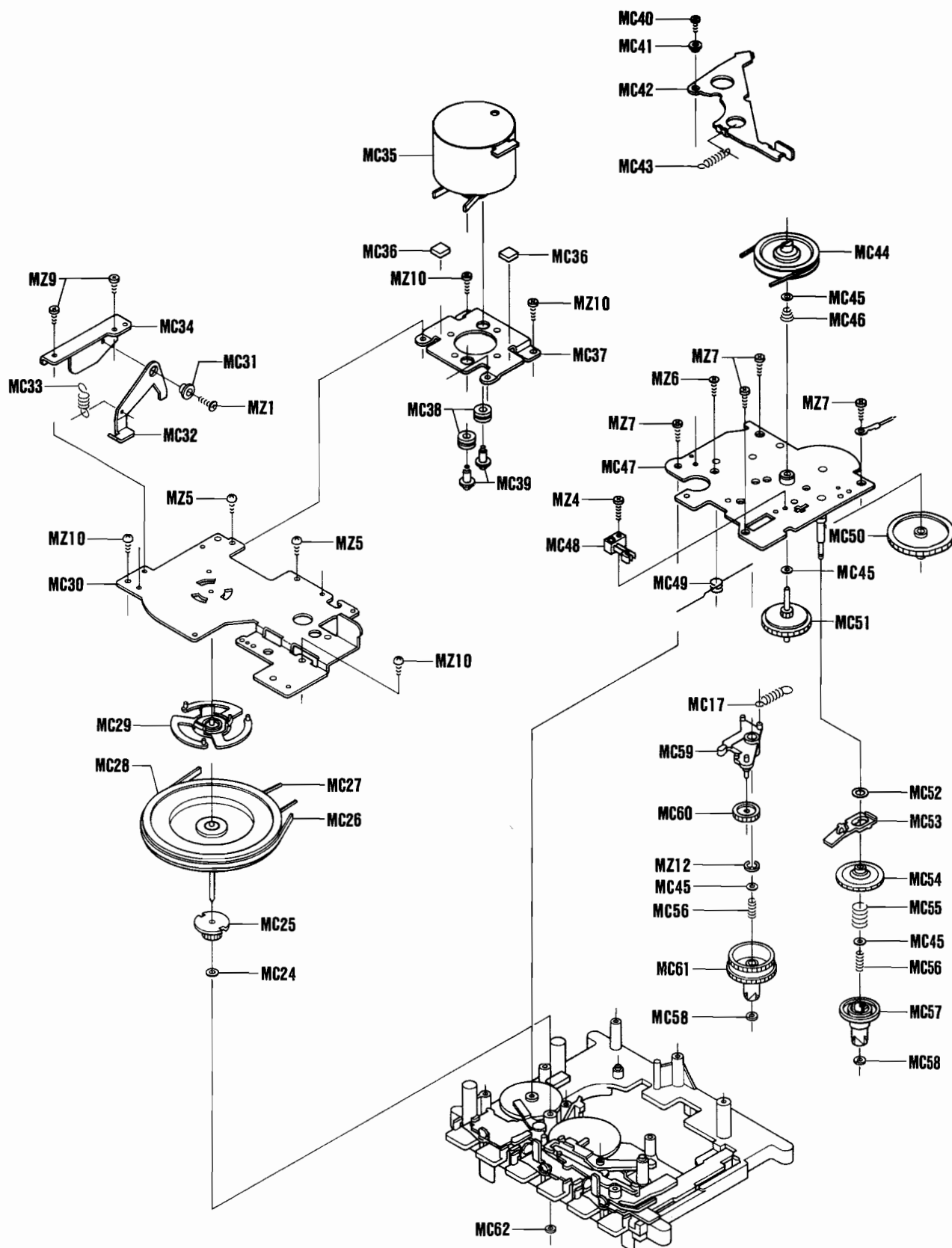
MECHANISM EXPLODED VIEW (Continued)

(DECK 2 TOP)



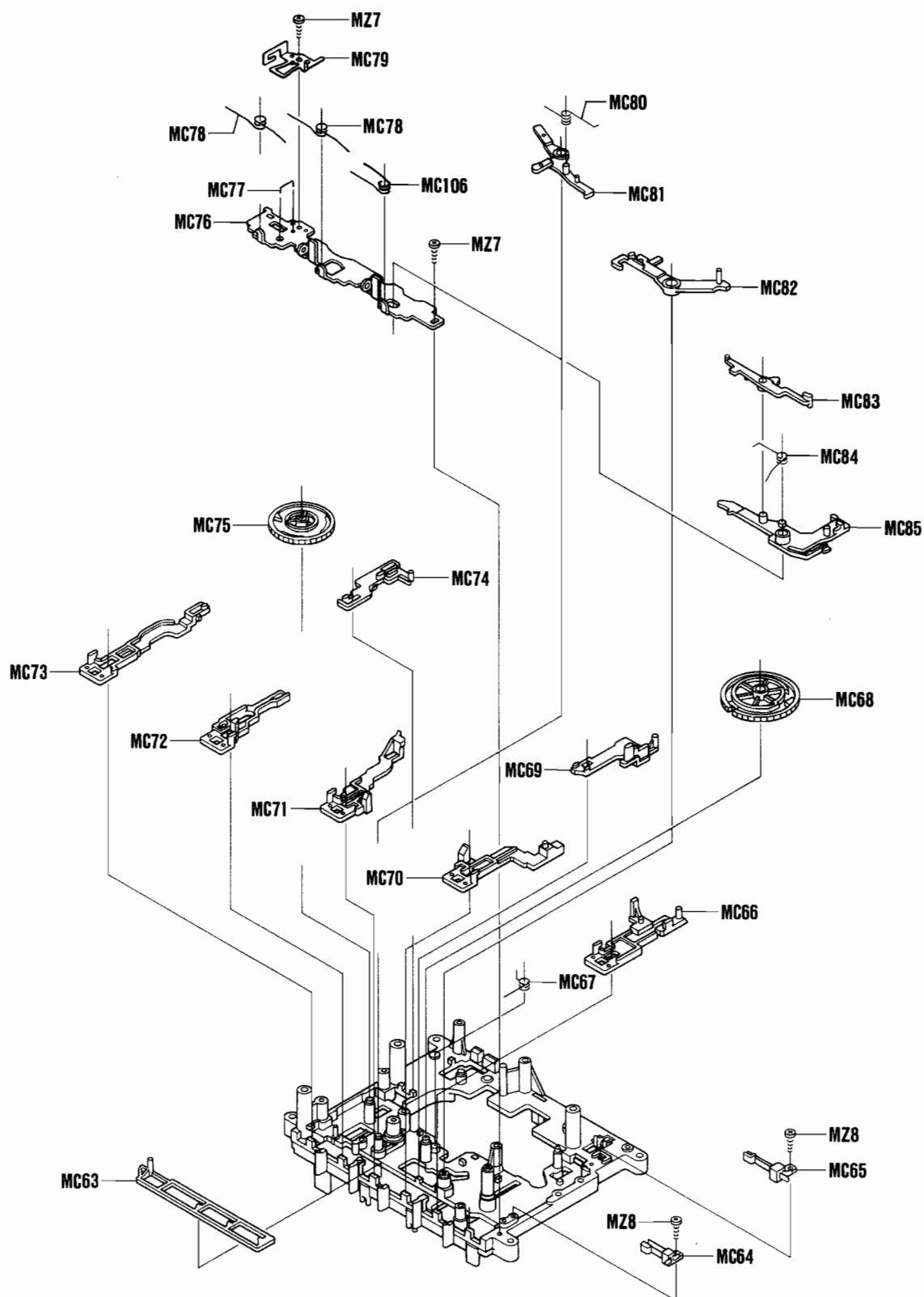
MECHANISM EXPLODED VIEW (Continued)

(DECK 2 BOTTOM-1)



MECHANISM EXPLODED VIEW (Continued)

(DECK 2 BOTTOM-2)



MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
DECK 1 & DECK 2 SIMILAR PARTS				MC62	141-2-4539-17600	Washer	2
	141-2-4729-04100	Lug	2	MC63	141-2-7319-53600	Plate Lock	2
MC1	141-0-3119-21900	Chassis Assy	2	MC64	4-2319-71863	Leaf Switch (FF/Rew) [S3 & S9]	2
MC2	141-2-7419-81300	Lever Cassette	2	MC65	4-2319-74550	Leaf Switch (Play Mute) [S4 & S10]	2
MC3	141-2-7419-80700	Lever Base Slide	2	MC66	141-2-7319-53400	Rod Play	2
MC4	141-2-7319-52801	Base Slide	2	MC67	141-2-8529-12600	Spring Gear Actuate Play	2
MC5	141-2-4219-13201	Screw Washer	4	MC68	141-2-5519-45900	Gear Actuate Play	2
MC6	141-2-4219-30300	Screw, Bind Hd., +M2.0x6	8	MC69	141-2-7319-52900	Rod Switch	2
MC7	141-2-8519-64900	Spring Arm Gear	4	MC70	141-2-7319-53300	Rod Rewind	2
MC8	141-2-8549-18700	Spring Slide Base	2	MC71	141-2-7319-53200	Rod Fastwind	2
MC9	141-2-8559-00201	Spring Head	2	MC72	141-2-7319-53100	Rod Pause	2
MC10	141-0-5419-02201	Pinchroller Assy	2	MC73	141-2-7319-53000	Rod Stop	2
MC11	141-2-8529-12500	Spring Pinchroller	2	MC74	141-2-7319-54900	Rod ASO	2
MC12	4-2319-75860	Leaf Switch (CrO2) [S6 & S12]	2	MC75	141-2-5519-45800	Gear Actuate Pause	2
MC12	4-2319-75860	Leaf Switch (Metal) [S7]	1	MC76	141-2-6139-14300	Frame Rod	2
MC13	141-2-7149-05600	Brake Supply Reel	2	MC77	141-2-8529-12800	Spring Pause Latch	2
MC14	141-2-7149-05700	Brake Take-up Reel	2	MC78	141-2-8529-12401	Spring Rod FF	5
MC15	141-2-8529-13200	Spring Sensor	2	MC79	141-2-8539-46700	Spring Plate Lock	2
MC16	141-2-7419-80100	Lever ASO	2	MC80	141-2-8529-13300	Spring Lever Pause	2
MC17	141-2-7439-30100	Arm Take-up	2	MC81	141-2-7419-80600	Lever Pause Start	2
MC18	141-2-5519-45300	Gear Take-up	2	MC82	141-2-7419-80500	Lever Play Start	2
MC19	141-2-8539-47901	Spring Cassette	2	MC83	141-2-7419-80800	Lever Switch Cue Review	2
MC20	141-2-4219-05400	Screw Washer	4	MC84	141-2-8529-14200	Spring Stop Record	2
MC21	141-2-7319-59300	Plate Eject	2	MC85	141-2-7419-81000	Lever Stop Record	2
MC22	141-2-8549-18500	Spring Eject	2	MZ1	101-3-1202-60611	Screw, Flat Hd., +M2.6x6	2
MC23	141-2-7419-81100	Lever Stop Eject	2	MZ2	101-3-1302-60811	Screw, Pan Hd., +M2.6x8	1
MC24	141-2-4539-20900	Washer	2	MZ3	101-3-1302-62011	Screw, Pan Hd., +M2.6x20	1
MC25	141-2-5519-45200	Gear Flywheel	2	MZ4	101-3-1702-00811	Screw, Bind Hd., +M2.0x8	3
MC26	141-2-5619-02000	Belt	2	MZ5	103-3-1302-60511	Screw, Pan Hd. Tapp.-2, +M2.6x5	4
MC27	141-2-5649-21200	Belt Wind	2	MZ6	143-3-1202-00818	Screw, Flat Hd. Tapp.-B, +M2.0x8	2
MC28	141-2-5219-15000	Flywheel Capstan	2	MZ7	143-3-1702-00618	Screw, Bind Hd. Tapp.-B, +M2.0x6	12
MC29	141-2-5739-06100	Thrust Flywheel	2	MZ8	143-3-1702-00818	Screw, Bind Hd. Tapp.-B, +M2.0x8	7
MC30	141-2-3519-61400	Support Flywheel	2	MZ9	143-3-1702-60611	Screw, Bind Hd. Tapp.-B, +M2.6x6	4
MC31	141-2-3529-16000	Spacer Lever Select	2	MZ10	143-3-1702-60818	Screw, Bind Hd. Tapp.-B, +M2.6x8	8
MC32	141-2-7419-88901	Lever Eject	2	MZ11	112-3-1302-00082	E Ring, M2.0	2
MC33	141-2-8549-00600	Spring Lever Eject	2	MZ12	112-3-1303-00082	E Ring, M3.0	2
MC34	141-2-3519-68500	Bracket Eject	2	DECK 1 ONLY			
MC35	4-5279-71238	Motor [M1 & M2]	2	MC86	141-2-8419-11700	Interlock Lever	1
MC36	141-2-4459-11800	Cushion Motor	4	MC87	141-2-8549-05500	Spring Lever Stop	1
MC37	141-2-3519-61502	Bracket Motor	2	MC88	141-2-4539-17500	Washer	1
MC38	141-2-4469-21300	Cushion	4	MC89	141-2-8259-11100	Roller Rec	1
MC39	141-2-4219-30100	Screw	4	MC90	141-0-7419-36900	Lever Rec Base Assy	1
MC40	141-2-4219-03000	Screw	2	MC91	141-2-3529-35900	Spacer Head	1
MC41	141-2-3529-36100	Spacer Lever	2	MC92	4-2429-71880	Erase Head [HD3]	1
MC42	141-2-7419-82800	Lever Shut Off Switch	2	MC93	4-2429-72350	R/P Head [HD2]	1
MC43	141-2-8519-61100	Spring Slide	2	MC94	141-2-3529-18102	Spacer Head	1
MC44	141-2-5519-45700	Pulley Friction	2	MC95	141-2-4219-23000	Screw	1
MC45	141-2-4539-27601	Washer	8	MC96	141-2-7419-81200	Lever Rec Select	1
MC46	141-2-8559-04700	Spring Pulley	2	MC97	141-2-7419-81400	Arm Record	1
MC47	141-0-3119-21800	Plate Chassis Assy	2	MC98	141-2-8419-14900	Lever R/P Switch	1
MC48	4-2319-74362	Leaf Switch (Motor) [S5 & S11]	2	MC99	141-2-7539-61600	Post Lever R/P Switch	1
MC49	141-2-8529-12700	Spring Arm FF	2	MC100	4-2319-74360	Leaf Switch (OSC) [S8]	1
MC50	141-2-5519-45600	Gear ASO	2	MC101	141-2-7419-80900	Lever Spring Stop Rec	1
MC51	141-0-5519-09600	Friction Assy	2	MC102	141-2-7419-80400	Lever Lock Record	1
MC52	141-2-4539-28001	Washer	2	MC103	141-2-7319-53500	Rod Record	1
MC53	141-2-7419-80200	Lever Rewind	2	DECK 2 ONLY			
MC54	141-2-5319-11600	Gear Reel Supply	2	MC104	141-2-3529-46800	Spacer Head	1
MC55	141-2-8519-67900	Spring Reel	2	MC105	4-2429-72340	Play Head [HD1]	1
MC56	141-2-8559-00100	Spring Supply	4	MC106	141-2-8529-24300	Spring Rod Play	1
MC57	141-2-5319-11700	Fin Reel Supply	2				
MC58	141-2-4539-15700	Washer	4				
MC59	141-2-7439-30000	Arm Fastwind	2				
MC60	141-2-5519-45100	Gear Fastwind	2				
MC61	141-2-5319-11500	Gear Reel Take-up	2				

CASSETTE DECK ELECTRICAL ADJUSTMENTS

BEFORE ADJUSTMENT

If the tape surface which contacts the head, the capstan, and the pinch roller, etc., is stained, it will cause unstable running of the tape, wow and flutter, imperfect recording and erasing, deterioration of tonal quality, and the tape jam around the capstan, etc. Occasionally clean each part as follows;

1. Cut off power.
2. Open the cassette lid.
3. Wipe the head, the capstan, and the pinch roller with a cotton swab. If they are excessively stained, clean them with the swab soaked in absolute alcohol or cleaning liquid on the market.

MEASURING INSTRUMENTS REQUIRED

- Dualtrace Oscilloscope
- AC VTVM (AC voltmeter with high impedance)
- Dummy Load (47k Ω)
- Frequency Counter
- Signal Oscillator
- Test Tapes
 - ‡ 10kHz Test Tape (Example: TEAC MTT-114) for Azimuth Adjustment
 - ‡ 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
 - ‡ 1.5kHz Test Tape (Example: A.BEX TCW-211) for Tape Speed Adjustment
 - ‡ Test Taped (Example: TEAC MTT-150) for Playback sensitivity Adjustment
- Test Tapes for Recording and Playback Operations
 - ‡ Normal Tape (Example: TDK AC 223)

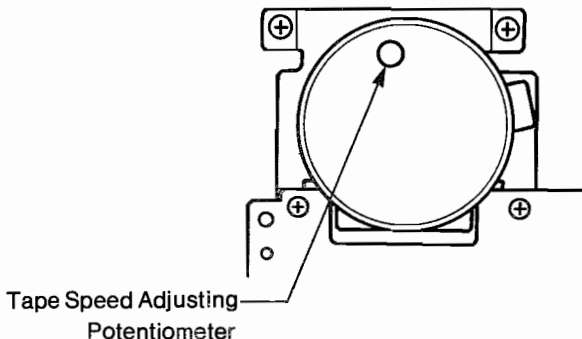
SWITCH POSITIONS

Unless especially indicated, set each switch as follows;

SPEED Switch NORMAL
DOLBY NR Switch OFF
SYNCHRO START Switch SEQ. PLAY

NORMAL TAPE SPEED ADJUSTMENT

1. Connect the dummy load (47k Ω) and the frequency counter to the LINE OUT terminal L.
2. Load Deck 1 with a test tape (Example: TEAC MTT-111) and set it in the playback mode.
3. Adjust the potentiometer inside the capstan drive motor, so that the output becomes 3000Hz $\pm$ 10Hz.
4. Perform the same adjustment for Deck 2.

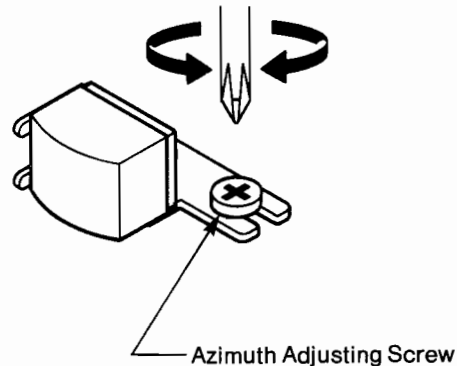


DOUBLE TAPE SPEED ADJUSTMENT

1. Connect the dummy load (47k Ω) and the frequency counter to the LINE OUT terminal L.
2. Short-circuit TP1 and TP2.
3. Load Deck 1 with a test tape (Example: A.BEX TCW-211) and set it in the playback mode.
4. Select a proper resistor (R392~R394) and solder the pattern on the P.C.Board, so that the output frequency becomes 3000Hz $\pm$ 10Hz.

HEAD AZIMUTH ADJUSTMENT

1. Connect the dummy load (47k Ω) and the dualtrace oscilloscope to the LINE OUT terminals L and R.
2. Load Deck 1 with a test tape (Example: TEAC MTT-114) and set it in the playback mode.
3. Adjust the azimuth adjustment screw, so that the wave forms become maximum on the oscilloscope and the right wave form overlaps with the left one.
4. Perform the same adjustment for Deck 2.



CASSETTE DECK ELECTRICAL ADJUSTMENTS (Continued)

PLAYBACK SENSITIVITY ADJUSTMENT

1. Connect the dummy load (47kΩ) and AC VTVM to the LINE OUT terminal L.
2. Load Deck 1 with a test tape (Example: TEAC MTT-150) and set it in the playback mode.
3. Adjust P102, so that the output of LINE OUT becomes 500mV.
4. Connect AC VTVM to the LINE OUT terminal R and adjust P202, so that the output becomes 500mV.
5. Load Deck 2 with a test tape (Example: TEAC MTT-150) and set it in the playback mode.
6. Adjust P101 (L) and P201 (R) in the same method as explained on Deck 1, so that the output becomes 500mV.

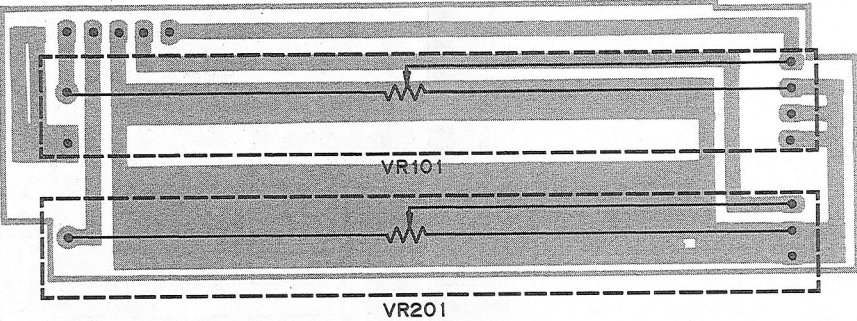
Note:

As this adjustment is affected by the semi-fixed potentiometer on the other deck, perform the adjustment several times until the optimum result is obtained.

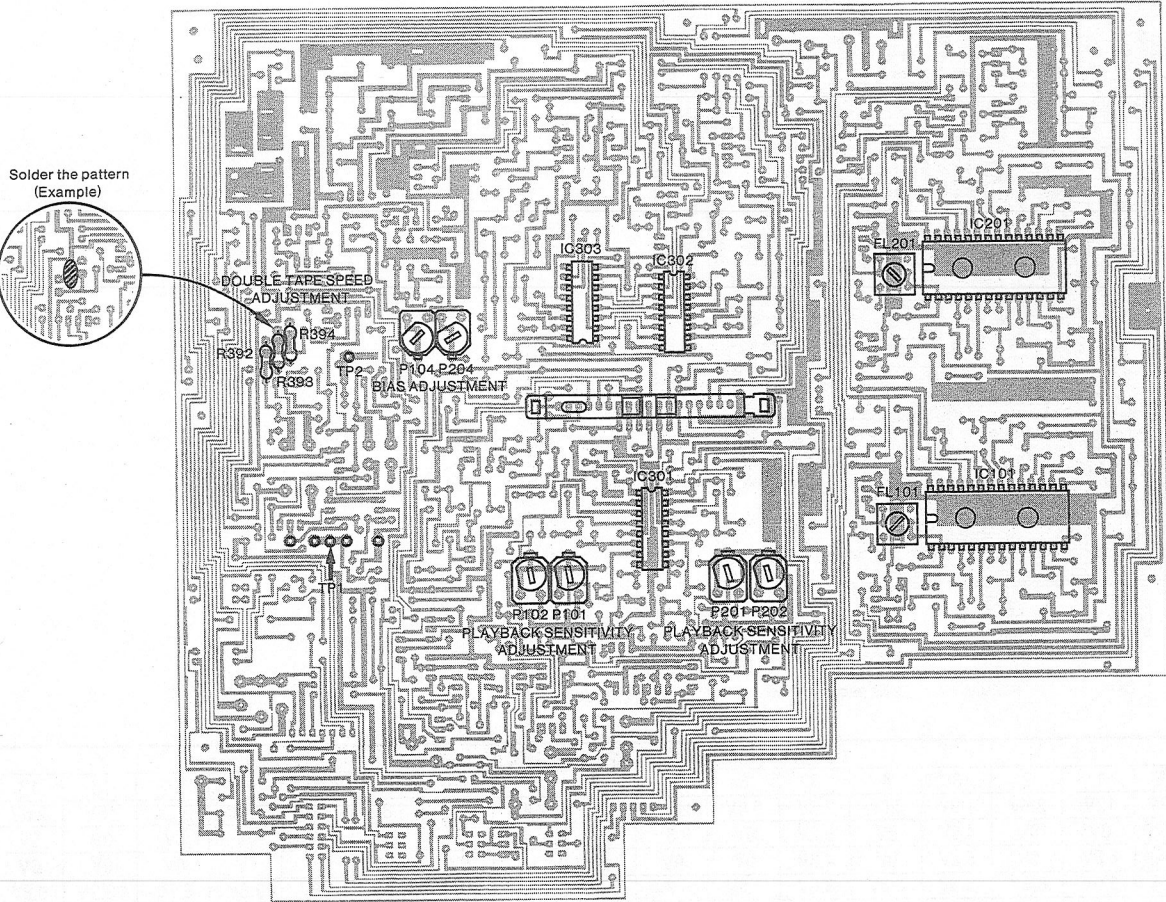
BIAS ADJUSTMENT

1. Connect the low frequency oscillator to the L side of the LINE IN terminal, and the dummy load (47kΩ) and AC VTVM to the L side of the LINE OUT terminal.
2. Load Deck 1 with a normal tape (Example: TDK AC223) and set it in the recording mode.
3. Set the Input Level volume control to the maximum position and feed the signals of 1kHz and 12.5kHz at 6mV from the frequency oscillator into the unit. Then, record the signals on the tape.
4. Play back the recorded signals adjust P104, so that the difference in output of the 1kHz and 12.5kHz signals become ±0.5dB.
5. Adjust P204 for the R side by following the same procedures as described for the L side.

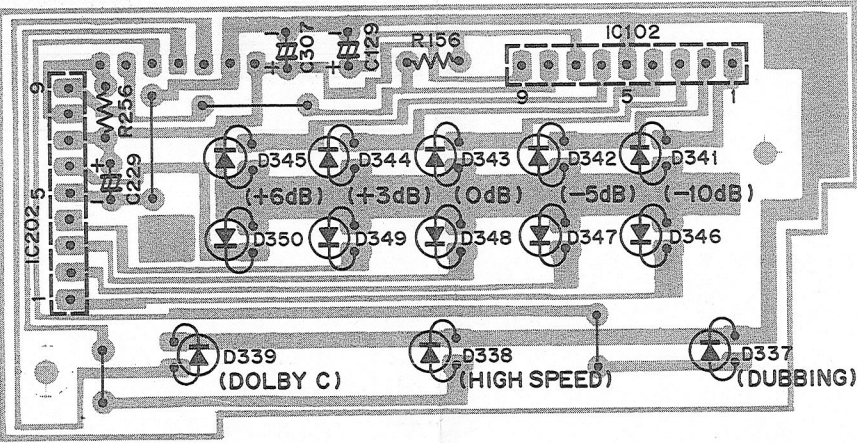
VOLUME P.C.BOARD (BOTTOM VIEW)



AMPLIFIER P.C.BOARD ALIGNMENT POINTS (TOP VIEW)

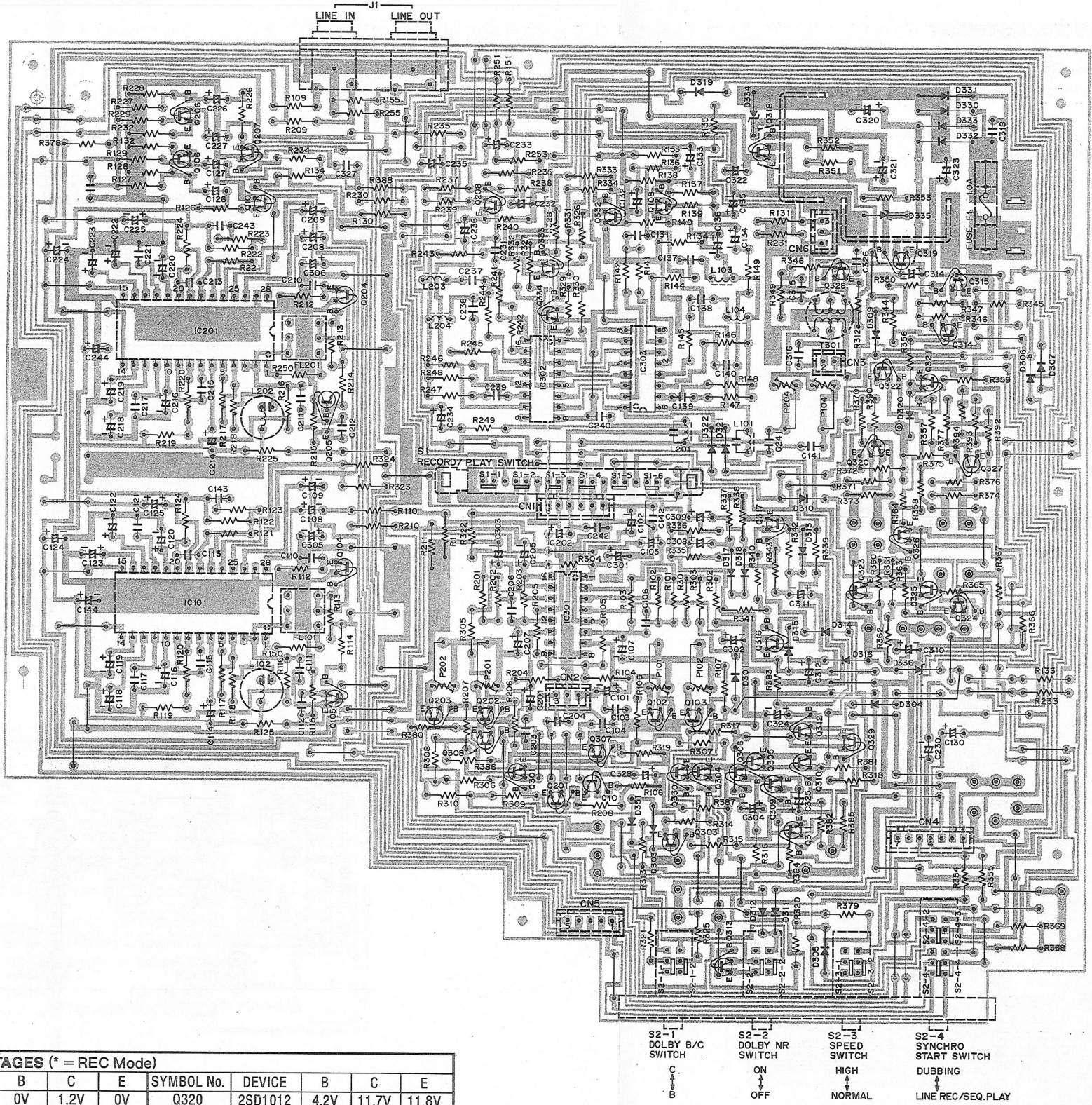


LED METER P.C.BOARD (BOTTOM VIEW)



IC PIN NUMBERS DC VOLTAGES										
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9
IC102,202	TA7366P	12.2V	12.2V	12.2V	12.4V	0V	12.4V	1.4V	1.4V	13.8V

AMPLIFIER P.C. BOARD



TRANSISTOR DC VOLTAGES (* = REC Mode)														
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q106,206	2SC3331	1.8V	7.4V	1.2V	Q310	2SC536	0V	1.2V	0V	Q320	2SD1012	4.2V	11.7V	11.8V
Q108,208	2SC3331	1.4V	8.7V	0.8V	Q311	2SC536	0.7V	0V	0V	Q321	2SC536	0.7V	0V	0V
Q301	2SC536	0V	1.5V	0V	Q312	2SC536	0V	8.9V	0V	Q322	2SC536	0.7V	0V	0V
Q303	2SC536	14.8V	14.6V	14.2V	Q313	2SC536	0V	0V	0V	Q323	2SD1012	0.2V	10.5V	0V
Q304	2SC536	0.7V	0V	0V	* Q314	2SA608	5.7V	6.2V	6.5V	Q324	2SD1012	0.2V	10.9V	0V
Q305	2SC536	0V	1.3V	0V	* Q315	2SC536	0.7V	0V	0V	Q325	2SD1012	0.7V	0V	0V
Q306	2SC536	0.7V	0V	0V	Q316	2SA608	14V	14.7V	14.7V	Q326	2SC536	0V	0V	0V
Q307	2SC536	0.7V	0V	0V	Q317	2SC536	0.7V	0V	0V	Q327	2SD1012	4.2V	11.8V	11.8V
Q308	2SC536	0V	0V	0V	Q318	2SC1846	16V	22.3V	15.3V	* Q328	2SC2274	0.5V	6.2V	0.2V
Q309	2SC536	0.7V	0V	0V	Q319	2SC1846	14.4V	22.3V	13.8V	Q329	2SC536	0.1V	0.7V	0V

IC PIN NUMBERS DC VOLTAGES																	
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC301	TA7705P	12V	2.6V	1.9V	2.6V	2.8V	2.8V	2.8V	0V	2.8V	-	2.8V	2.8V	2.8V	2.6V	15V	2.6V
IC302	TD62504P	0V	0V	4.3V	0V	5.2V	0V	8.3V	0V	-	0V	0V	0V	0V	0V	0V	0V
IC303	TD62504P	8.3V	0V	5.2V	0V	4.3V	0V	0V	0V	-	0V	0V	0V	0V	0V	0V	0V
IC101,201	TEA0665	6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	6.7V	6.7V	6.7V	6.7V	6.7V	0.8V	0.8V	6.7V	13.2V	0.8V
		17	18	19	20	21	22	23	24	25	26	27	28				
		0.8V	6.7V	6.7V	6.6V	6.7V	6.7V	6.7V	0.2V	1.3V	6.6V	0V	6.6V				

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY				IC301	4-2069-74290	IC, TA 7705 P	1
PCB1	141-0-1939-10791	Amplifier P.C.B. Assy	1	IC302	4-2069-73760	IC, TD 62504 P	1
	4-2369-73780	RT Pin 1P	30	IC303	4-2069-73760	IC, TD 62504 P	1
	143-3-1903-00811	Screw, Brazier Hd. Tapp.-B, +M3.0x8	2	Q101	203-5-5083-33160	Transistor, 2SC 3331	1
	131-2-6201-28000	Plate Heat Sink (for Q318)	1	Q102	203-5-5000-53653	Transistor, 2SC 536	1
	131-2-6201-28000	Plate Heat Sink (for Q319)	1	Q103	203-5-5000-53653	Transistor, 2SC 536	1
	△ 4-2352-01940	Fuse Clip	2	Q104	203-5-5000-53653	Transistor, 2SC 536	1
CN1	4-2369-73160	Connector 6P	1	Q105	203-5-5000-53653	Transistor, 2SC 536	1
CN2	4-2369-73130	Connector 3P	1	Q106	203-5-5083-33160	Transistor, 2SC 3331	1
CN3	4-2362-00770	Plug 2P	1	Q107	203-5-4921-01260	Transistor, 2SD 1012	1
CN4	4-2369-73410	Connector 7P	1	Q108	203-5-5083-33160	Transistor, 2SC 3331	1
CN5	4-2369-73150	Connector 5P	1	Q201	203-5-5083-33160	Transistor, 2SC 3331	1
CN6	4-2369-73130	Connector 3P	1	Q202	203-5-5000-53653	Transistor, 2SC 536	1
F1	△ 4-2349-70140	Fuse (T 1.0A)	1	Q203	203-5-5000-53653	Transistor, 2SC 536	1
J1	4-2359-75361	4P Pin Jack (Line)	1	Q204	203-5-5000-53653	Transistor, 2SC 536	1
S1	4-2319-75950	Slide Switch (Record/Play)	1	Q205	203-5-5000-53653	Transistor, 2SC 536	1
S2	4-2319-78141	Switch Push 4 Key	1	Q206	203-5-5083-33160	Transistor, 2SC 3331	1
L101	4-2529-70270	Bias Trap	1	Q207	203-5-4921-01260	Transistor, 2SD 1012	1
L102	4-2729-70561	Trap Coil	1	Q208	203-5-5083-33160	Transistor, 2SC 3331	1
L103	4-2552-00610	AF Coil	1	Q301	203-5-5000-53653	Transistor, 2SC 536	1
L104	4-2552-00140	AF Coil	1	Q303	203-5-5000-53653	Transistor, 2SC 536	1
L201	4-2529-70270	Bias Trap	1	Q304	203-5-5000-53653	Transistor, 2SC 536	1
L202	4-2729-70561	Trap Coil	1	Q305	203-5-5000-53653	Transistor, 2SC 536	1
L203	4-2552-00610	AF Coil	1	Q306	203-5-5000-53653	Transistor, 2SC 536	1
L204	4-2552-00140	AF Coil	1	Q307	203-5-5000-53653	Transistor, 2SC 536	1
L301	4-2589-72940	Bias OSC Coil	1	Q308	203-5-5000-53653	Transistor, 2SC 536	1
P101	4-2222-01490	Semi-fixed (B-500Ω)	1	Q309	203-5-5000-53653	Transistor, 2SC 536	1
P102	4-2222-01490	Semi-fixed (B-500Ω)	1	Q310	203-5-5000-53653	Transistor, 2SC 536	1
P104	4-2229-72971	Potentiometer (B-100kΩ)	1	Q311	203-5-5000-53653	Transistor, 2SC 536	1
P201	4-2222-01490	Semi-fixed (B-500Ω)	1	Q312	203-5-5000-53653	Transistor, 2SC 536	1
P202	4-2222-01490	Semi-fixed (B-500Ω)	1	Q313	203-5-5000-53653	Transistor, 2SC 536	1
P204	4-2229-72971	Potentiometer (B-100kΩ)	1	Q314	203-5-7200-60850	Transistor, 2SA 608	1
FL101	4-2539-71810	MPX Filter	1	Q315	203-5-5000-53653	Transistor, 2SC 536	1
FL201	4-2539-71810	MPX Filter	1	Q316	203-5-7200-60850	Transistor, 2SA 608	1
D301	202-5-2810-44210	Diode, DS 442	1	Q317	203-5-5000-53653	Transistor, 2SC 536	1
D303	202-5-2810-44210	Diode, DS 442	1	Q318	4-2039-70600	Transistor, 2SC 1846	1
D304	202-5-2810-44210	Diode, DS 442	1	Q319	4-2039-70600	Transistor, 2SC 1846	1
D305	202-5-2810-44210	Diode, DS 442	1	Q320	203-5-4921-01260	Transistor, 2SD 1012	1
D306	202-5-2810-44210	Diode, DS 442	1	Q321	203-5-5000-53653	Transistor, 2SC 536	1
D307	202-5-2810-44210	Diode, DS 442	1	Q322	203-5-5000-53653	Transistor, 2SC 536	1
D309	202-5-2810-44210	Diode, DS 442	1	Q323	203-5-4921-01260	Transistor, 2SD 1012	1
D310	202-5-2810-44210	Diode, DS 442	1	Q324	203-5-4921-01260	Transistor, 2SD 1012	1
D311	202-5-2810-44210	Diode, DS 442	1	Q325	203-5-4921-01260	Transistor, 2SD 1012	1
D312	202-5-2810-44210	Diode, DS 442	1	Q326	203-5-5000-53653	Transistor, 2SC 536	1
D313	202-5-2810-44210	Diode, DS 442	1	Q327	203-5-4921-01260	Transistor, 2SD 1012	1
D314	202-5-2810-44210	Diode, DS 442	1	Q328	203-5-7252-27450	Transistor, 2SC 2274	1
D315	202-5-2810-44210	Diode, DS 442	1	Q329	203-5-5000-53653	Transistor, 2SC 536	1
D316	202-5-2810-44210	Diode, DS 442	1	Q330	203-5-5000-53653	Transistor, 2SC 536	1
D317	202-5-2810-44210	Diode, DS 442	1	Q332	203-5-5000-53653	Transistor, 2SC 536	1
D318	202-5-2810-44210	Diode, DS 442	1	Q333	203-5-5000-53653	Transistor, 2SC 536	1
D319	202-5-2810-44210	Diode, DS 442	1	Q334	203-5-5000-53653	Transistor, 2SC 536	1
D320	202-5-2810-44210	Diode, DS 442	1	C101	CD4-7-5250-0KB1V	Electrolytic 4.7μF 25V	1
D321	202-5-2810-44210	Diode, DS 442	1	C102	CD4-7-5250-0KB1V	Electrolytic 4.7μF 25V	1
D322	202-5-2810-44210	Diode, DS 442	1	C103	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1
D330	202-5-2540-13552	Diode, DS135	1	C104	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
D331	202-5-2540-13552	Diode, DS135	1	C105	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
D332	202-5-2540-13552	Diode, DS135	1	C106	CM1-8-3500-K00SV	Mylar 0.018μF 50V ±10%	1
D333	202-5-2540-13552	Diode, DS135	1	C107	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
D334	202-5-3210-15013	Zener Diode, GZA 15Z	1	C108	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
D335	202-5-3210-13013	Zener Diode, GZA 13Z	1	C109	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
D336	202-5-3200-02211	Zener Diode, GZA 2.2X	1	C110	CM1-0-2500-K00SV	Mylar 0.001μF 50V ±10%	1
D351	202-5-2810-44210	Diode, DS 442	1	C111	CM3-9-2500-K00SV	Mylar 0.0039μF 50V ±10%	1
IC101	4-2069-73340	IC, TEA 0665	1	C112	CM1-2-2500-K00SV	Mylar 0.0012μF 50V ±10%	1
IC201	4-2069-73340	IC, TEA 0665	1	C113	CM4-7-2500-K00SV	Mylar 0.0047μF 50V ±10%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty	
C114	CD4-7-5250-0001V	Electrolytic	4.7μF 25V	1	C238	CM8-2-2500-K00SV	Mylar 0.0082μF 50V ±10%	1
C115	CM4-7-2500-K00SV	Mylar	0.0047μF 50V ±10%	1	C239	CM3-9-3500-K00SV	Mylar 0.039μF 50V ±10%	1
C116	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	C240	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
C117	CM4-7-3500-K00SV	Mylar	0.047μF 50V ±10%	1	C241	CC1-0-1500-KE00C	Ceramic 100pF 50V ±10%	1
C118	CD2-2-4500-0KB1V	Electrolytic	0.22μF 50V	1	C242	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
C119	CD6-8-4500-0KB1V	Electrolytic	0.68μF 50V	1	C243	CM1-0-3500-K00SV	Mylar 0.01μF 50V ±10%	1
C120	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	C244	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C121	CM4-7-3500-K00SV	Mylar	0.047μF 50V ±10%	1	C301	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C122	CD2-2-4500-0KB1V	Electrolytic	0.22μF 50V	1	C302	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C123	CD6-8-4500-0KB1V	Electrolytic	0.68μF 50V	1	C303	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C124	CD1-0-7160-0001V	Electrolytic	100μF 16V	1	C304	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
C125	CD4-7-5250-0001V	Electrolytic	4.7μF 25V	1	C305	CD4-7-5250-0KB1V	Electrolytic 4.7μF 25V	1
C126	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	C306	CD4-7-5250-0KB1V	Electrolytic 4.7μF 25V	1
C127	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	C308	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C130	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	C309	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C131	CM3-9-3500-K00SV	Mylar	0.039μF 50V ±10%	1	C310	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1
C132	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	C311	CD4-7-5250-0001V	Electrolytic 4.7μF 25V	1
C133	CD4-7-4500-0001V	Electrolytic	0.47μF 50V	1	C312	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C134	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	C314	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C135	CD4-7-6160-0001V	Electrolytic	47μF 16V	1	C315	CM2-2-3500-K00SV	Mylar 0.022μF 50V ±10%	1
C136	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	C316	CP1-2-3101-J003V	Polypropylen 0.012μF 100V ±5%	1
C137	CM1-5-3500-K00SV	Mylar	0.015μF 50V ±10%	1	C318	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C138	CM8-2-2500-K00SV	Mylar	0.0082μF 50V ±10%	1	C320	CD1-0-8250-0001V	Electrolytic 1000μF 25V	1
C139	CM3-9-3500-K00SV	Mylar	0.039μF 50V ±10%	1	C321	CD4-7-7160-0001V	Electrolytic 470μF 16V	1
C140	CC4-7-1500-KE00C	Ceramic	470pF 50V ±10%	1	C322	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C141	CC1-0-1500-KE00C	Ceramic	100pF 50V ±10%	1	C323	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C142	CC6-8-1500-KE00C	Ceramic	680pF 50V ±10%	1	C324	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
C143	CM1-0-3500-K00SV	Mylar	0.01μF 50V ±10%	1	C325	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
C144	CD1-0-7160-0001V	Electrolytic	100μF 16V	1	C326	CM1-2-3500-K00SV	Mylar 0.012μF 50V ±10%	1
C201	CD4-7-5250-0KB1V	Electrolytic	4.7μF 25V	1	C327	CM2-2-3500-K00SV	Mylar 0.022μF 50V ±10%	1
C202	CD4-7-5250-0KB1V	Electrolytic	4.7μF 25V	1	C328	CD4-7-6100-0001V	Electrolytic 47μF 10V	1
C203	CC2-2-1500-KE00C	Ceramic	220pF 50V ±10%	1	R101	RD6-8-2251-JM000	Carbon 6.8kΩ 1/4W ±5%	1
C204	CC4-7-1500-KE00C	Ceramic	470pF 50V ±10%	1	R102	RD8-2-2251-JM000	Carbon 8.2kΩ 1/4W ±5%	1
C205	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	R103	RD1-8-4251-JM000	Carbon 180kΩ 1/4W ±5%	1
C206	CM1-8-3500-K00SV	Mylar	0.018μF 50V ±10%	1	R104	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1
C207	CD1-0-763A-0001V	Electrolytic	100μF 6.3V	1	R105	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1
C208	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	R106	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
C209	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	R107	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
C210	CM1-0-2500-K00SV	Mylar	0.001μF 50V ±10%	1	R108	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1
C211	CM3-9-2500-K00SV	Mylar	0.0039μF 50V ±10%	1	R109	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
C212	CM1-2-2500-K00SV	Mylar	0.0012μF 50V ±10%	1	R110	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1
C213	CM4-7-2500-K00SV	Mylar	0.0047μF 50V ±10%	1	R111	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1
C214	CD4-7-5250-0001V	Electrolytic	4.7μF 25V	1	R112	RD1-0-5251-JM000	Carbon 1MΩ 1/4W ±5%	1
C215	CM4-7-2500-K00SV	Mylar	0.0047μF 50V ±10%	1	R113	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1
C216	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	R114	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1
C217	CM4-7-3500-K00SV	Mylar	0.047μF 50V ±10%	1	R115	RD1-0-5251-JM000	Carbon 1MΩ 1/4W ±5%	1
C218	CD2-2-4500-0KB1V	Electrolytic	0.22μF 50V	1	R116	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1
C219	CD6-8-4500-0KB1V	Electrolytic	0.68μF 50V	1	R117	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1
C220	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	R118	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1
C221	CM4-7-3500-K00SV	Mylar	0.047μF 50V ±10%	1	R119	RD8-2-3251-JM000	Carbon 82kΩ 1/4W ±5%	1
C222	CD2-2-4500-0KB1V	Electrolytic	0.22μF 50V	1	R120	RD3-3-3251-JM000	Carbon 33kΩ 1/4W ±5%	1
C223	CD6-8-4500-0KB1V	Electrolytic	0.68μF 50V	1	R121	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1
C224	CD1-0-7160-0001V	Electrolytic	100μF 16V	1	R122	RD6-8-3251-JM000	Carbon 68kΩ 1/4W ±5%	1
C225	CD4-7-5250-0001V	Electrolytic	4.7μF 25V	1	R123	RD5-1-2251-JM000	Carbon 5.1kΩ 1/4W ±5%	1
C226	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	R124	RD8-2-3251-JM000	Carbon 82kΩ 1/4W ±5%	1
C227	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	R125	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1
C230	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	R126	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1
C231	CM3-9-3500-K00SV	Mylar	0.039μF 50V ±10%	1	R127	RD8-2-3251-JM000	Carbon 82kΩ 1/4W ±5%	1
C232	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	R128	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1
C233	CD4-7-4500-0001V	Electrolytic	0.47μF 50V	1	R129	RD5-6-1251-JM000	Carbon 560Ω 1/4W ±5%	1
C234	CD1-0-5500-0001V	Electrolytic	1μF 50V	1	R130	RD6-8-0251-JM000	Carbon 68Ω 1/4W ±5%	1
C235	CD4-7-6160-0001V	Electrolytic	47μF 16V	1	R131	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1
C236	CD1-0-6160-0001V	Electrolytic	10μF 16V	1	R132	RD8-2-0251-JM000	Carbon 82Ω 1/4W ±5%	1
C237	CM1-5-3500-K00SV	Mylar	0.015μF 50V ±10%	1	R133	RD4-3-3251-JM000	Carbon 43kΩ 1/4W ±5%	1

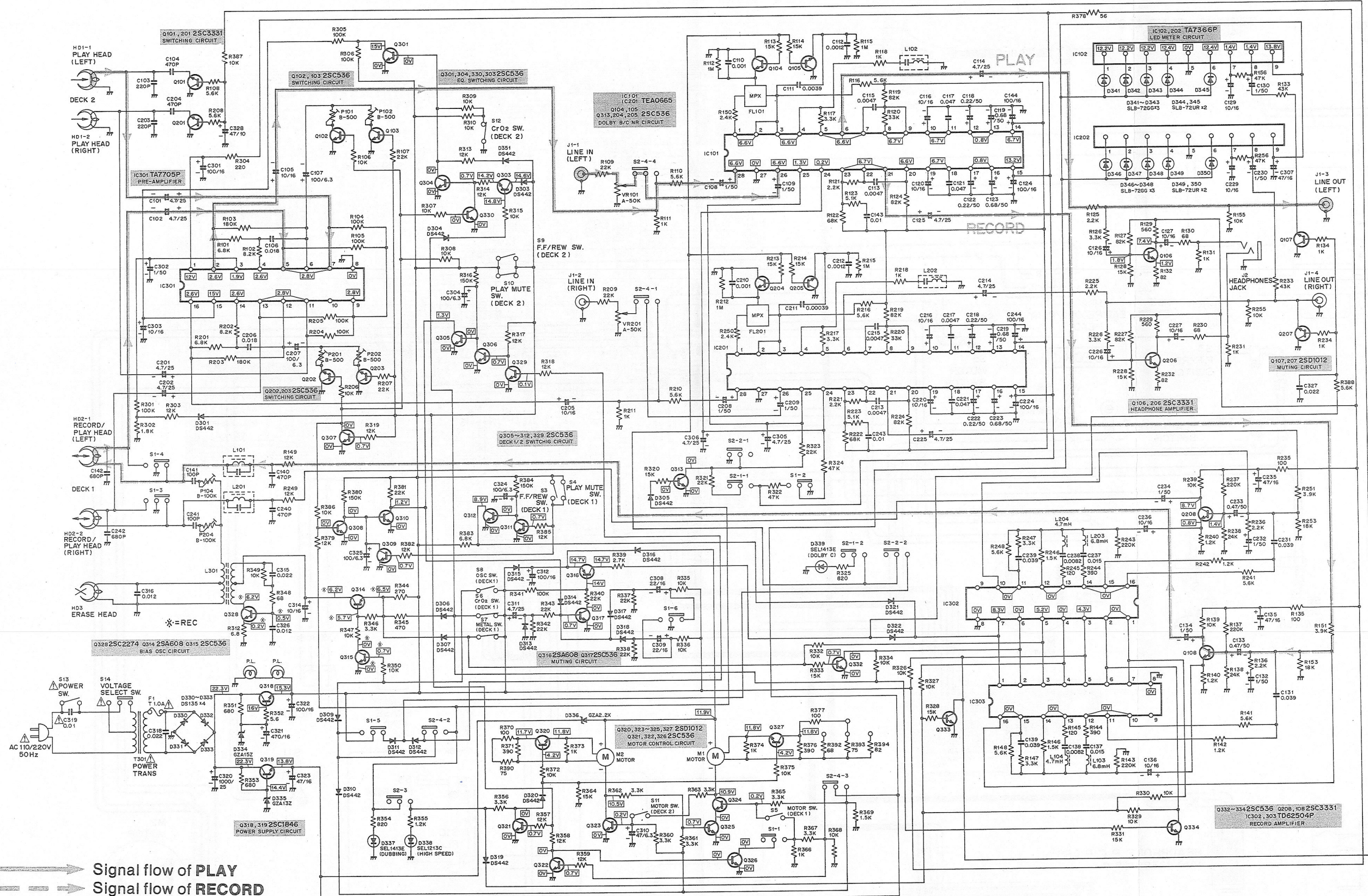
P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
R134	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1	R245	RD1-2-1251-JM000	Carbon 120Ω 1/4W ±5%	1
R135	RD1-0-1251-JS000	Carbon 100Ω 1/4W ±5%	1	R246	RD1-5-2251-JM000	Carbon 1.5kΩ 1/4W ±5%	1
R136	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1	R247	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1
R137	RD2-2-4251-JM000	Carbon 220kΩ 1/4W ±5%	1	R248	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1
R138	RD2-4-3251-JM000	Carbon 24kΩ 1/4W ±5%	1	R249	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
R139	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1	R250	RD2-4-2251-JM000	Carbon 2.4kΩ 1/4W ±5%	1
R140	RD1-2-2251-JM000	Carbon 1.2kΩ 1/4W ±5%	1	R251	RD3-9-2251-JM000	Carbon 3.9kΩ 1/4W ±5%	1
R141	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1	R253	RD1-8-3251-JM000	Carbon 18kΩ 1/4W ±5%	1
R142	RD1-2-2251-JM000	Carbon 1.2kΩ 1/4W ±5%	1	R255	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R143	RD2-2-4251-JM000	Carbon 220kΩ 1/4W ±5%	1	R301	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1
R144	RD3-9-1251-JM000	Carbon 390Ω 1/4W ±5%	1	R302	RD1-8-2251-JM000	Carbon 1.8kΩ 1/4W ±5%	1
R145	RD1-2-1251-JM000	Carbon 120Ω 1/4W ±5%	1	R303	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
R146	RD1-5-2251-JM000	Carbon 1.5kΩ 1/4W ±5%	1	R304	RD2-2-1251-JM000	Carbon 220Ω 1/4W ±5%	1
R147	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1	R305	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1
R148	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1	R306	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1
R149	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1	R307	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R150	RD2-4-2251-JM000	Carbon 2.4kΩ 1/4W ±5%	1	R308	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R151	RD3-9-2251-JM000	Carbon 3.9kΩ 1/4W ±5%	1	R309	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R153	RD1-8-3251-JM000	Carbon 18kΩ 1/4W ±5%	1	R310	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R155	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1	R312	RD6-8-A251-JM000	Carbon 6.8Ω 1/4W ±5%	1
R201	RD6-8-2251-JM000	Carbon 6.8kΩ 1/4W ±5%	1	R313	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
R202	RD8-2-2251-JM000	Carbon 8.2kΩ 1/4W ±5%	1	R314	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
R203	RD1-8-4251-JM000	Carbon 180kΩ 1/4W ±5%	1	R315	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R204	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1	R316	RD1-5-4251-JM000	Carbon 150kΩ 1/4W ±5%	1
R205	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1	R317	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
R206	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1	R318	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
R207	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1	R319	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
R208	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1	R320	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1
R209	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1	R321	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
R210	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1	R322	RD4-7-3251-JM000	Carbon 47kΩ 1/4W ±5%	1
R211	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1	R323	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
R212	RD1-0-5251-JM000	Carbon 1MΩ 1/4W ±5%	1	R324	RD4-7-3251-JM000	Carbon 47kΩ 1/4W ±5%	1
R213	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1	R325	RD8-2-1251-JM000	Carbon 820Ω 1/4W ±5%	1
R214	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1	R326	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R215	RD1-0-5251-JM000	Carbon 1MΩ 1/4W ±5%	1	R327	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R216	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1	R328	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1
R217	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1	R329	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R218	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1	R330	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R219	RD8-2-3251-JM000	Carbon 82kΩ 1/4W ±5%	1	R331	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1
R220	RD3-3-3251-JM000	Carbon 33kΩ 1/4W ±5%	1	R332	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R221	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1	R333	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1
R222	RD6-8-3251-JM000	Carbon 68kΩ 1/4W ±5%	1	R334	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R223	RD5-1-2251-JM000	Carbon 5.1kΩ 1/4W ±5%	1	R335	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R224	RD8-2-3251-JM000	Carbon 82kΩ 1/4W ±5%	1	R336	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R225	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1	R337	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
R226	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1	R338	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
R227	RD8-2-3251-JM000	Carbon 82kΩ 1/4W ±5%	1	R339	RD2-7-2251-JM000	Carbon 2.7kΩ 1/4W ±5%	1
R228	RD1-5-3251-JM000	Carbon 15kΩ 1/4W ±5%	1	R340	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
R229	RD5-6-1251-JM000	Carbon 560Ω 1/4W ±5%	1	R341	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1
R230	RD6-8-0251-JM000	Carbon 68Ω 1/4W ±5%	1	R342	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
R231	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1	R343	RD2-2-3251-JM000	Carbon 22kΩ 1/4W ±5%	1
R232	RD8-2-0251-JM000	Carbon 82Ω 1/4W ±5%	1	R344	RH2-7-1501-JZ003	Metal 270Ω 1/2W ±5%	1
R233	RD4-3-3251-JM000	Carbon 43kΩ 1/4W ±5%	1	R345	RD4-7-1251-JM000	Carbon 470Ω 1/4W ±5%	1
R234	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1	R346	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1
R235	RD1-0-1251-JS000	Carbon 100Ω 1/4W ±5%	1	R347	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R236	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1	R348	RD6-8-0251-JM000	Carbon 68Ω 1/4W ±5%	1
R237	RD2-2-4251-JM000	Carbon 220kΩ 1/4W ±5%	1	R349	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R238	RD2-4-3251-JM000	Carbon 24kΩ 1/4W ±5%	1	R350	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
R239	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1	R351	RD6-8-1251-JS000	Carbon 680Ω 1/4W ±5%	1
R240	RD1-2-2251-JM000	Carbon 1.2kΩ 1/4W ±5%	1	R352	RF5-6-A251-JH000	Mold 5.6Ω 1/4W ±5%	1
R241	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1	R353	RD6-8-1251-JS000	Carbon 680Ω 1/4W ±5%	1
R242	RD1-2-2251-JM000	Carbon 1.2kΩ 1/4W ±5%	1	R354	RD8-2-1251-JS000	Carbon 820Ω 1/4W ±5%	1
R243	RD2-2-4251-JM000	Carbon 220kΩ 1/4W ±5%	1	R355	RD1-2-2251-JM000	Carbon 1.2kΩ 1/4W ±5%	1
R244	RD3-9-1251-JM000	Carbon 390Ω 1/4W ±5%	1	R356	RD3-3-2251-JM000	Carbon 3.3kΩ 1/4W ±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
R357	RD1-2-3251-JM000	Carbon	12kΩ 1/4W ±5% 1	D346	DYY---SLB--72GG-	LED, SLB 72 GG	1
R358	RD1-2-3251-JM000	Carbon	12kΩ 1/4W ±5% 1	D347	DYY---SLB--72GG-	LED, SLB 72 GG	1
R359	RD1-2-3251-JM000	Carbon	12kΩ 1/4W ±5% 1	D348	DYY---SLB--72GG-	LED, SLB 72 GG	1
R360	RD3-3-2251-JM000	Carbon	3.3kΩ 1/4W ±5% 1	D349	DYY---SLB--72UR-	LED, SLB 72 UR	1
R361	RD3-3-2251-JM000	Carbon	3.3kΩ 1/4W ±5% 1	D350	DYY---SLB--72UR-	LED, SLB 72 UR	1
R362	RD3-3-2251-JM000	Carbon	3.3kΩ 1/4W ±5% 1	IC102	4-2069-74370	IC, TA7366P	1
R363	RD3-3-2251-JM000	Carbon	3.3kΩ 1/4W ±5% 1	IC202	4-2069-74370	IC, TA7366P	1
R364	RD1-5-3251-JM000	Carbon	15kΩ 1/4W ±5% 1	C129	CD1-0-6160-0002V	Electrolytic 10μF 16V	1
R365	RD3-3-2251-JM000	Carbon	3.3kΩ 1/4W ±5% 1	C229	CD1-0-6160-0002V	Electrolytic 10μF 16V	1
R366	RD1-0-2251-JM000	Carbon	1kΩ 1/4W ±5% 1	C307	CD4-7-6160-0002V	Electrolytic 47μF 16V	1
R367	RD3-3-2251-JM000	Carbon	3.3kΩ 1/4W ±5% 1	R156	RP4-7-3121-JH000	Carbon 47kΩ 1/8W ±5%	1
R368	RD1-0-3251-JM000	Carbon	10kΩ 1/4W ±5% 1	R256	RP4-7-3121-JH000	Carbon 47kΩ 1/8W ±5%	1
R369	RD1-5-2251-JM000	Carbon	1.5kΩ 1/4W ±5% 1				
R370	RD1-0-1251-JM000	Carbon	100Ω 1/4W ±5% 1				
R371	RD3-9-1251-JM000	Carbon	390Ω 1/4W ±5% 1				
R372	RD1-0-3251-JM000	Carbon	10kΩ 1/4W ±5% 1				
R373	4-2219-70363	LT Resistor	1kΩ 1				
R374	4-2219-70363	LT Resistor	1kΩ 1				
R375	RD1-0-3251-JM000	Carbon	10kΩ 1/4W ±5% 1				
R376	RD3-9-1251-JM000	Carbon	390Ω 1/4W ±5% 1				
R377	RD1-0-1251-JM000	Carbon	100Ω 1/4W ±5% 1				
R378	RD5-6-0251-JS000	Carbon	56Ω 1/4W ±5% 1				
R379	RD1-2-3251-JM000	Carbon	12kΩ 1/4W ±5% 1				
R380	RD1-5-4251-JM000	Carbon	150kΩ 1/4W ±5% 1				
R381	RD2-2-3251-JM000	Carbon	22kΩ 1/4W ±5% 1				
R382	RD1-2-3251-JM000	Carbon	12kΩ 1/4W ±5% 1				
R383	RD6-8-2251-JM000	Carbon	6.8kΩ 1/4W ±5% 1				
R384	RD1-5-4251-JM000	Carbon	150kΩ 1/4W ±5% 1				
R385	RD1-2-3251-JM000	Carbon	12kΩ 1/4W ±5% 1				
R386	RD1-0-3251-JM000	Carbon	10kΩ 1/4W ±5% 1				
R387	RD1-0-3251-JM000	Carbon	10kΩ 1/4W ±5% 1				
R388	RD5-6-2251-JM000	Carbon	5.6kΩ 1/4W ±5% 1				
R390	RD7-5-0251-JM000	Carbon	75Ω 1/4W ±5% 1				
R392	RD6-8-0251-JM000	Carbon	68Ω 1/4W ±5% 1				
R393	RD7-5-0251-JM000	Carbon	75Ω 1/4W ±5% 1				
R394	RD8-2-0251-JM000	Carbon	82Ω 1/4W ±5% 1				
VOLUME P.C.B. ASSY							
PCB2	141-0-1939-10800	Volume P.C.B. Assy	1				
CN5	4-2359-77802	Connector 5P Assy	1				
VR101	4-2229-75180	Slide Volume (A-50kΩ)	1				
VR201	4-2229-75180	Slide Volume (A-50kΩ)	1				
HEADPHONE P.C.B. ASSY							
PCB3	141-0-1939-10810	Headphone P.C.B. Assy	1				
CN6	4-2359-76797	Connector 3P Assy	1				
J2	4-2359-77530	Jack 3P (Headphones)	1				
LED METER P.C.B. ASSY							
PCB4	141-0-1939-10820	LED Meter P.C.B. Assy	1				
	141-2-3749-09700	Shelter	1				
	141-2-3769-18200	Spacer LED	1				
	143-3-1902-60811	Screw, Brazier Hd. Tapp.-B, +M2.6x8	2				
CN4	131-0-4006-31423	Cord Assy	1				
D337	4-2029-73860	LED, SEL1413E (Dubbing)	1				
D338	4-2029-73850	LED, SEL1213C (High Speed)	1				
D339	4-2029-73860	LED, SEL1413E (Dolby C)	1				
D341	DYY---SLB--72GG-	LED, SLB 72 GG	1				
D342	DYY---SLB--72GG-	LED, SLB 72 GG	1				
D343	DYY---SLB--72GG-	LED, SLB 72 GG	1				
D344	DYY---SLB--72UR-	LED, SLB 72 UR	1				
D345	DYY---SLB--72UR-	LED, SLB 72 UR	1				

SCHEMATIC DIAGRAM



No.	Name	Position	No.	Name	Position
S1	Record Play Switch	PLAY	S7	Metal Switch (Deck 1)	ON
S2-1	Dolby B/C Switch	B	S8	OSC Switch (Deck 1)	OFF
S2-2	Dolby NR Switch	OFF	S9	F.F./Rew Switch (Deck 2)	OFF
S2-3	Speed Switch	NORMAL	S10	Play Mute Switch (Deck 2)	OFF
S2-4	Syncho Start Switch	LINE REC	S11	Motor Switch (Deck 2)	ON
S3	F.F./Rew Switch (Deck 1)	OFF	S12	CrO2 Switch (Deck 2)	ON
S4	Play Mute Switch (Deck 1)	ON	S13	Power Switch (Deck 2)	OFF
S5	Motor Switch (Deck 1)	OFF	S14	Voltage Select Switch	220V
S6	CrO2 Switch (Deck 1)	ON			

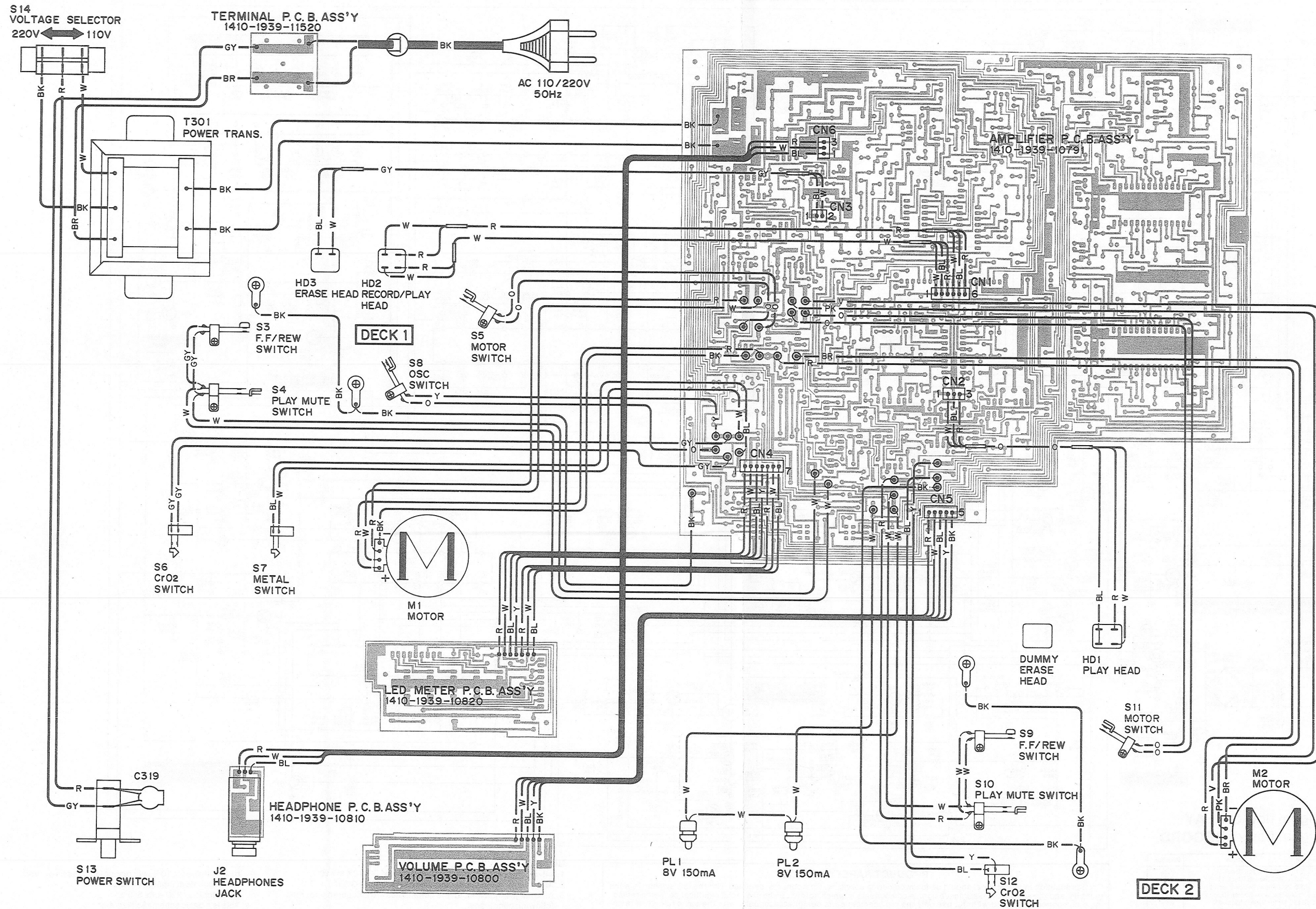
PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTES:

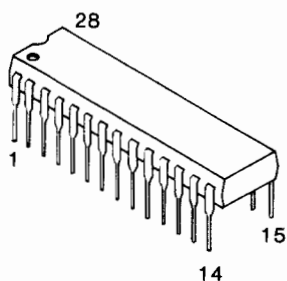
- All resistors values are indicated in "ohm" (K=10³, M=10⁶).
 - All capacitors values are indicated in "μF" (P=10⁻¹²).
 - All voltages indicated on the schematics are measured under the following conditions.
 - Use a V.T.V.M.
 - Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.
- b. All voltages ±10% with respect to chassis ground
c. No signals at input terminals
d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

POINT TO POINT WIRING DIAGRAM

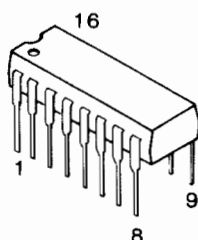


SEMICONDUCTOR LEAD IDENTIFICATION

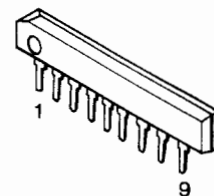
INTEGRATED CIRCUITS



- TEA 0665 P



- TA 7705 P
- TD 62504 P



- TA 7366 P

BI-POLAR TRANSISTORS



- 2SA 608
- 2SC 2274
- 2SC 3331
- 2SC 536

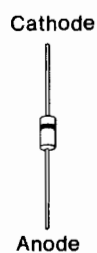


- 2SD 1012



- 2SC 1846

DIODES



- DS 135 TD
- DS 442
- GZA 2.2 X
- GZA 13 Z
- GZA 15 Z

Bezeichnung/Description
SERVICE MANUAL
 Teile-Nr./Parts No. Menge/Quantity
WM14719 1
 Lagerort LS-Nr.
37A02 451639 / 16
 FISHER HiFi Service GmbH



FISHER

FISHER Hi-Fi Europa Vertriebs GmbH

Stahlgruberring 4 Tel: 089/420 45-0
 8000 München 82 Tlx: 524033
 Technisches Labor/ Durchwahl -120/121
 Qualitätskontrolle
 Funkstörmeßlabor -127/128
 Service-Zentrale
 Color TV -166
 Hi-Fi/Audio -168
 Video -172
 Autoradio -170
 Ersatzteillager -155/156
 Techn. Schulung -174

Weitere Service-Zentralen in BRD (keine Ersatzteilbestellungen)

Offenbach/ Frankfurt	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Hamburg	Spaldingstraße 1 2000 Hamburg	Tel: 040/23 12 23/24 Tlx: 2 173 839
Military	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Ditzingen	Max-Eyth-Straße 11 7257 Ditzingen	Tel: 07156/50 88 Tlx: 7 245 278
Düsseldorf-Erkrath	Albert-Einstein-Straße 8 4006 Erkrath 1	Tel: 0211/200 05-0 Tlx: 8 588 563	Berlin (Fisher Vertragswerkstatt)	Drewitz & Kaulbach Eisenacher Straße 53 1000 Berlin 62	Tel: 030/781 20 01 Tlx: 186 460

Unser FISHER-Team steht Ihnen jederzeit gerne zur Verfügung. Ersatzteilbestellungen wickeln Sie bitte ausschließlich mit unserer Service-Zentrale München ab.

Senden Sie uns im Garantiefall die ausgefüllte Garantiekarte ein. Bei unverkauften Lagergeräten des Fachhandels gilt als Garantienachweis eine eidesstattliche Versicherung mit eingetragener Modellbezeichnung und Geräte-Nummer oder ein Lieferrachweis. Die gleiche Regelung besteht auch für Reparaturaufträge.

Bitte geben Sie unbedingt die Ersatzteil-Nummer und die Modellbezeichnung an.

Sie sparen so wertvolle Zeit. Vielen Dank.

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